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MAINTENANCE MANUAL ORIONTM **VHF SYNTHESIZER/RECEIVER/EXCITER BOARD** B19/CMN-352 A/B

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DESCRIPTION

The ORIONTM Synthesizer/Receiver/Exciter board provides, on one printed circuit board, circuits for the synthesizer, receiver and transmitter exciter. The synthesizer circuit generates transmit frequencies for two ranges. Range A (or Part 1) is 136-153 MHz, and range B (or Part 2) is 150-174 MHz. Receiver injection frequencies are also generated by the synthesizer of 181.1-219.1 MHz.

The receive circuit is an FM dual-conversion, super-heterodyne receiver designed for operation in the 136-174 MHz frequency range. Regulated 9 Volts is supplied to all receiver stages except the audio PA integrated circuit which operates from the switched A+ supply.

The receiver has Intermediate Frequencies (IF's) of 82.2 MHz and 455 kHz. Adjcent channel selectivity is obtained

by two band-pass filters, an 82.2 MHz crystal filter, and a 455 kHz ceramic filter.

The receiver circuit, except for the synthesizer circuit, consists of:

- Front End Mixer
- 45.1 MHz 1st IF, 455 kHz 2nd IF and FM Detector
- Audio Signal Processor (ASP) including squelch
- Audio PA

The receiver Front End and Mixer Circuits are on the Synthesizer/Receiver/Exciter board. The 82.2 MHz 1st IF and the 455 kHz 2nd IF, FM Detector, ASP and Audio PA circuits are on the System Control/IF Board (refer to Maintenance Manual LBI-38906).



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The exciter circuit consists of two wide-band amplifier stages operating over a frequency range of 136-174 MHz without any tuning. The Exciter circuit amplifies a 1 milliwatt signal generated by a Voltage Controlled Oscillator (VCO) in the synthesizer circuit to a 400 milliwatt drive input to the power amplifier.

CIRCUIT ANALYSIS

FREQUENCY SYNTHESIZER

The frequency synthesizer receives SYNTH CLOCK, SYNTH DATA, and control information from the microcomputer and from this generates the transmit and receive RF frequencies (refer to Figure 1). The synthesizer also provides frequency-lock status to the microcomputer. The synthesizer consists of synthesizer chip IC201, low and high current buffers, loop filters, Tx and Rx Voltage Controlled Oscillators (VCO's), feedback amplifiers, the dual modulus prescaler and the reference oscillator. The VCO's are locked to the reference oscillator by a single direct divide synthesis loop consisting of the feedback buffer, prescaler and synthesizer. The Tx VCO operates over a frequency range of 136 MHz to 174 MHz. The Rx VCO operates over the range of 181.1 to 219.1 MHz.

Reference Oscillator

The reference oscillator consists of a 2-PPM Temperature Compensated Xrystal Oscillator (TCXO). The standard reference oscillator frequency is 12.8 MHz. The TCXO is enclosed in an RF shielded housing. Access to the oscillator trimmer is made through a hole in the top of the housing. The TXCO is compensated by an internal temperature compensating circuit for both low and high temperatures. With no additional compensation the oscillators provide 2 PPM stability from -30°C to +60°C.

Synthesizer

Synthesizer chip IC201 contains a programmable reference oscillator divider (+R), phase detector and programmable VCO dividers (÷N, A). The reference frequency, 12.8 MHz from the reference ocillator, is divided by a fixed integer number to obtain a 6.25 kHz or 5 kHz channel reference for the synthesizer. This divide value can be changed by PROM programming. The internal phase detector compares the output of the reference divider with the output of the internal N, A counter. The N, A counter receives as an input the VCO frequency divided by the dual modulus prescaler and programmed by the microcomputer. This comparison results in a \pm error voltage when the phases differ and a constant output voltage when the frequency detector inputs compare in frequency and phase.

If a phase error is detected an error voltage is developed and applied to the VCO DC offset buffer, high current buffers, and loop-filter to adjust the VCO frequency. The count of the +N, A counters is controlled by the frequency data received on the SYNTH CLOCK and SYNTH DATA lines from the microcomputer. When a different channel is selected or when changing to the transmit or receive mode an error voltage is generated and appears at the phase detector output, APD OUT, causing the phase-locked-loop to acquire the new frequency.

The SYNTH ENABLE pulse from the microcomputer enables the synthesizer and allows frequency data to be internally stored.

Equalizer

The equalizer circuit consists of operational amplifier IC203-A, resistors R205 and R207 and capacitor C206. This circuit receives transmit audio from Loop Modulation Adjust RV201. The output of the equalizer is summed with the output signal from the Phase Detector in the Adder operational amplifier IC203-B.

DC Offset And High Current Buffers

DC offset buffer transistors TR201 and TR202 and diode CD202-A receive error voltage from the synthesizer and increase the level of this error voltage by 1.8 Vdc. This extends the operating range of the high current buffers. When the Phase-Lock-Loop (PLL) is off frequency due to a channel change or frequency drift, the error voltage from the Synthesizer (APD) rises or falls, turning TR201 either On or Off. This transistor (TR201) controls the DC offset buffer TR202. Resistor R214, diode CD202-A and transistor TR202 complete a high current rapid charge or discharge path for capacitors C210, C211 and C212. As the error voltage decreases, TR201, TR202 and CD202-A turn on, completing a discharge path for C210 through C212. When the error voltage goes positive, TR201, TR202 and CD212 are turned off, allowing C210 through C212 to charge through R214.

When a channel is changed in receive and when changing from transmit to receive, bilateral switch IC204-E, B, C, and D are turned on for 4 milliseconds. When changing from receive to transmit, bilateral switches IC204-C, E, D, and B, are turned on for 10 milliseconds.

Loop Filter

The loop filter consists of resistors R216 through R218 and capacitors C210 through C212. This filter controls the bandwidth and stability of the synthesizer loop. Bilateral switch IC204 is controlled by 9 Volt SYNTH BANDWIDTH pulse. When the SYNTH BANDWIDTH pulse is present, the bilateral switch shorts out the low-pass filter, greatly increasing the loop bandwidth to achieve the 4 millisecond channel acquisition time required for dual priority scan. The low-pass filter removes noise and other extraneous signals internal to the synthesizer chips. The output of the filter is applied to the varicaps in the transmit and receive VCO's to adjust and maintain the VCO frequency.

The use of two VCO's allows rapid independent selection of transmit and receive frequencies across the frequency split.

Receiver Voltage Controlled Oscillator

The receiver VCO consists of low-noise JFET oscillator, TR240, followed by high-gain buffer transistor TR241. Transistor TR241 prevents external loading and provides power gain. The VCO is a Colpitts oscillator circuit with the various varactors, capacitors and a high-Q resonator coil forming the tank circuit.

The VCO is switched On and Off under the control of the **T/R** line. When the **T/R** line is high, the receiver VCO is turned on (TR 242 is ON). Oscillator output is typically 0 dBm. The output is applied to the feedback buffer for VCO frequency control and as the Rx injection frequency to the receiver 1st mixer through local oscillator buffers in the receive circuit. The Rx VCO uses a high-Q coil to achieve superior noise performance. The VCO operates over a frequency range of 181.1 - 219.1 MHz. The VCO voltage need only be set once at the highest frequency of the band split, after which it operates over the entire split with no additional tuning.

Transmitter Voltage Controlled Oscillator

The transmit VCO is basically the same as the receiver VCO. The wideband VCO allows frequency separation of 17 MHz, or 24 MHz as determined by the bandsplit the radio is operating on. 136-153 MHz, or 150-174 MHz. The varactors in conjunction with the frequency segment selector circuitry (transistors TR2301-TR2303 and band-switching diodes CD285-CD290) provide a voltage controlled adjustment range that extends across the entire frequency split. VCO control switch transistor TR282 turns the transmit VCO on when the T/R line is low.

Feed Back Buffer

The buffered output of the Rx VCO and Tx VCO, from buffer transistors TR241 and TR281 respectively, are supplied to feedback buffer IC206. This, in turn, drives dual modulus prescaler IC205. The buffered VCO output also provides Rx or Tx injection drive.

Lock Detect The lock detect circuit consists of comparator IC207, diodes CD204 and CD205, and reference oscillator mute switch transistor TR203. It is used to quickly synchronize the phase relation of the divided-down VCO frequency with the reference oscillator if the loop loses lock. It also provides a fast lock-detect signal to the microcomputer to turn on the out-of-lock indicator. If a large change in frequency is required, the ramp capacitor output (C_R) of the synthesizer increases voltage on the LD line from the synthesizer. Thus, transistor TR203 disables the reference oscillator and allows the PLL loop to be brought back to synchronization rapidly.

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Dual Modulus Prescaler

The dual modulus prescaler completes the PLL feedback path from the synthesizer to the loop-filter, to the VCO's and feedback buffers and then back to the synthesizer through the prescaler. The prescaler divides the VCO frequency by 64 or 65 under control of M CONT signal from the synthesizer. The output of the prescaler is applied to the synthesizer where it is divided down to 6.25 kHz or 5 kHz by an internal ÷N, A counter and compared in frequency and phase with the divided-down frequency from the reference oscillator. The result of this comparison is the error voltage used to maintain frequency lock. The +N, A counter is controlled by frequency data received from the microcomputer. Depending on the operating frequency, the DC voltage at Test Point TP201 should be within the range of 3.5 to 7.5 Vdc when the PLL is locked.

If a large frequency error exists, the LD positive lead from the synthesizer carries negative spikes to the microcomputer. Transistor TR203 is turned on, thus preventing reference oscillator muting.

Loop Mod Adjust

The Loop Mod Adjust circuit automatically sets the loop modulation level applied to equalizer circuit IC202 and IC203 through Loop Mod Adjuster RV201. The loop Mod Adjust modulation circuit consists of decoder IC208, bilateral switch IC209, resistors R2001 through R2006 and RV201. The loop modulation level is controlled by turning bilateral switches IC209 On or Off (under control of IC208) to include attenuators R2001 through R2006 in the circuit. Resistors R2001 through R2006 form an adjustable voltage divider to change the loop modulation level as required. Table 1 also identifies the resistor (if applicable) used for each frequency segment.

Frequency Segment Selector

The Frequency Segment Selector, operating under control of the microcomputer, switches capacitance in and out of the Tx and Rx VCO tank circuits to select the frequency segment containing the selected channel. The Frequency Segment Selector consists of transistor packages TR2301 through TR2303 and band switching diodes CD243 through CD248 and CD285 through CD290. Capacitors C260, C261, C266, C267, C272, C273, C2104-C2107 and C2111-C2114, C2118-C2120 and C2121 are selected or deselected for operation in a given segment. Table 2 identifies the circuit conditions existing for selection of each segment and the capacitors used.

Reverse bias to turn off the band switching diodes is provided by the +8 Volt filtered supply through resistors R2303, R2306 and R2309. Forward bias for the diodes and current for the switching transistors is provided by the +8 Volts supply through resistors R2301, R2302, R2304, R2305, R2307 and R2308. When segment 3 is selected, switching transistors TR2302 and TR2303 are turned on. In the Tx VCO diodes CD287, CD288, CD289 and CD290 are reverse biased and CD285 and CD286 are turned on. Capacitors C211 and C2112, C2118 and C2119 are effectively isolated from ground and C2104 and C2105 are connected to ground through CD285 and CD286.

Similarly in the Rx VCO capacitors C266, C267, C272 and C273 are isolated from ground. Capacitor C260 and C261 are grounded through diodes CD243 and CD244.

Operation of the radio over the frequency ranges 136-153 MHz or 150-174 MHz is determined by the group number of the synthesizer board. Each frequency split is divided into four operating segments varying from 4 to 6.5 MHz wide.

RECEIVER

Receiver Front End

An RF signal from the antenna is coupled through a lowpass filter, antenna relay, high-pass filter and switchable impedance matching network to the input of RF amplifier (RF AMP) transistor TR401 (Refer to Figure 2). The RF amplifier TR401 is gain switched through a switchable attenuator (about 18 dB / 14 db) by diode CD403.

The output of TR401 is coupled through a low-pass filter and a band-pass filter to the input of 1st mixer HC441. Front end selectivity is provided by this band-pass filter.

Receiver Injection

Receiver RF injection (181.1-219.1 MHz) from the synthesizer Voltage Controlled Oscillator (VCO) is applied to the base of receiver injection amplifier (**Rx INJ AMP**) transistor TR461. The input level of TR461 is between 1.0 and 2.0 milliwatts. The output of TR461 is coupled to the input of receiver injection amplifier (**Rx INF AMP**) transistor TR462. The output of amplifier TR462 is filtered by a lowpass filter consisting of capacitors C475, C476, C477 and inductor L465. This filter is tuned to pass frequencies in the 181.1-219.1 MHz pass band.

<u>1st Mixer</u>

The first mixer is a double-balanced diode mixer (HC441) that converts a signal in the 136-174 MHz frequency range to the 45.1 MHz first IF frequency. In the mixer stage, RF from the receiver front-end RF filter is applied to one input of the mixer. Injection voltage from the amplifier stage is applied to the other input of the mixer. The difference between the receiver front-end RF frequency and the injection frequency produces the 45.1 MHz first Intermediate Frequency (IF). The circuit analysis tor the receiver is continued in maintenance manual LBI-38907 for SYSTEM CONTROL/IF/AUDIO FREQUENCY BOARD CMF-138W.

1st IF

The 45.1 MHz 1st IF output signal is coupled from the output of HC441 through capacitor C501 to the source input of IF amplifier TR501 and TR502. TR501 and TR502 are JFET amplifier/buffer stages operated in parallel. The output of the JFET buffer is coupled through inductor L502 to a 4-pole crystal band-pass filter FL501.

The highly selective crystal filters FL501-1 and FL501-2 provide the first portion of the receiver IF selectivity. The output of the filters is coupled through the impedancematching network, inductor L504, capacitors C504 and C505 to the first IF amplifier TR503. The crystal filter output FL501 is applied to the base of the 1st IF amplifier TR503, and the amplified signal is taken from the collector through the impedance-matching network of inductor L505. capacitor C506 and resistor R507 that matches the amplifier output to the input of FL502.

The output of the filter is coupled through impedancematching network inductor L507, capacitor C508, and resistor R508 to the 2nd mixer TR505.

Table 1 - Frequency Segment Selection

	Segment	Frequency Split (MHz)	SYNTH Band 1 (INPUT TR2303)	SYNTH Band 2 (INPUT TR2301)	SYNTH Band 3 (INPUT TR2302)	Grounded Modulation Resistor
136-153 MHz	1	136-140	1	1	1	R2004
	2	140-144	0	1	1	R2003
	3	144-148	0	1	0	R2002
	4	148-153	0	0	0	R2006
150-174 MHz	1	150-155.5	1	1	1	R2004
	2	155.5-161.5	0	1	1	R2003
	3	161.5-167.5	0	1	0	R2002
	4	167.5-174	0	0	0	R2006

Table 2 - Capacitor Selection

Segment	Transistor Switch				I	Band Switc	hing Diode	es		Grounded
	TR2301	TR2302	TR2303	CD243 CD244	CD245 CD246	CD247 CD248	CD285 CD286	CD287 CD288	CD289 CD290	Capacitors
1	0	0	0	ON	ON	ON	ON	ON	ON	ALL
2	0	0	1	ON	ON	OFF	ON	ON	OFF	C260, C261, C266, C267, C2104, C2105, C2111, C2112
3	0	1	1	ON	OFF	OFF	ON	OFF	OFF	C260, C261, C2104, C2105
4	1	1	1	OFF	OFF	OFF	OFF	OFF	OFF	NONE

NOTE: 1 - Transistor turned ON, 0 - Transistor turned OFF



Figure 1 - Synthesizer Block Diagram

Figure 2 - Receiver Block Diagram

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Figure 3 - Exciter Block Diagram

2nd Mixer

The 45.1 MHz IF input is applied to transistor TR505 and mixed with a 44.645 MHz frequency supplied by crystal oscillator X501. Inductor L521 sets the frequency of X501.

2nd IF And Detector

The output of the second mixer is coupled to the 4-pole ceramic filter FL503 that provides the 455 kHz selectivity. The output of the ceramic filter is coupled to integrated circuit IC501. This IC and associated circuitry function as the IF amplifier and FM detector.

The 455 kHz IF input is applied to pin 3 of the IC.

The IF signal is amplified and applied to a 4-pole ceramic filter FL504 to provide the 455 kHz selectivity. The output of the 455 kHz filter is applied to intergrated circuit IC501-7. The second IF signal is amplified and limited.

Inductor L523 phase shifts the IF signal by 90° and applies it to the internal FM detector. The FM detector compares the shifted IF signal to the internal IF signal to recover the audio modulation. The audio output of integrated circuit IC501 is applied to the audio amplifier buffer integrated circuit IC502-2. The audio output of IC502-2 is applied to the System Control circuit.

Exciter Circuit

The 136-174 MHz Tx injection (TX INJ) input from the Tx VCO is applied to the input of amplifier IC151 through an impedance matching circuit consisting of capacitor C151, in-

about 400 milliwatts.

for TR151 is 1.5 volts.

- ductor L151 and capacitor C152 (refer to Figure 3). The Vcc supply voltage (+5 Volts) is applied through Vcc feed network resistor R151 and inductor L152. Capacitor C153 is used to bypass the supply line. The +5 Volts is supplied by voltage regulator IC152 (3-terminal voltage regulator).
- The output of IC151 drives amplifier transistor TR151 through an impedance matching circuit consisting of capacitor C154, inductor L153 and coupling capacitor C156. Resistors R153, R152 and diode CD151 set the bias voltage for TR151.
- Collector voltage (+9 Volts) for TR151 is applied through the collector feed network resistor R154 and inductor L155. C158 and C159 are bypass capacitors.
- The output of TR151 is coupled to connector J151 through impedance matching components consisting of inductor L156 and capacitors C160 and C161.
- Resistor R155 provides negative feedback through capacitor C157 and C168 to ensure stability.
 - Transistor TR151 amplifies a 20 milliwatt input level to
- Supply voltage (A+) from connector J501 is regulated to 9 Volts by regulator IC481 (3-terminal regulator). The +9 Volts regulated output on IC481, pin 3 is applied to IC152 and TR151 through Tx power switch transistor TR152. When TX **ENBL** is high (receive mode) +9 Volts is not applied. The exciter energizes when the TX ENBL state is made low by the microprocessor, causing TR152 to conduct and apply the regulated +9 Volts to all exciter stages. A typical emitter voltage

RF WIDE BAND AMPLIFIER IC151 B19/5DDAC00946 (NEC UPC1678G)

SYNTHESIZER IC201 B19/5DAAJ00861 (MOTOROLA MC145159FN)

POSITIVE VOLTAGE REGULATOR IC152 B19/5DAAN00644 (JRC NJM78LO6UA)



DUAL OPERATIONAL AMPLIFIER IC202 B19/5DDAB00515 (MITSUBISHI M5223FP)

DUAL OPERATIONAL AMPLIFIER IC203 B19/5DAAN00368 (New JRC NJM3404AM)

О

PRESCALER IC205









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B19/5DDAS00232 (MOTOROLA MC12022SLAD)

IC DATA

BILATERAL SWITCH IC204, IC209 B19/5DAAJ00629 (MOTOROLA MC14066BF)

RF WIDE BAND AMPLIFIER IC206 B19/5DAAA00284 (NEC UPC1676G)

DUAL COMPARATOR IC207 B19/5DDAB00516 (MITSUBISHI M5233FP)



POSITIVE VOLTAGE REGULATOR IC230 B19/5DAAR00021 (PANASONIC AN6541)

DECODER IC208 B19/5DAAJ00985 (MOTOROLA MC74HC237F)

POSITIVE VOLTAGE REGULATOR IC481 B19/5DAAA00428 (NEC UPC2409HF)







SYNTHESIZER BOARD SYNTHESIZER SECTION CMN-352A2W (Used in 344A4577P1) CMN-352B2W (Used in 344A4577P2)

2233 B195CAAD00838 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2266 B195CAAD00961 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2267 B195CAAD00964 Ceramic: 8 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2267 B195CAAD00964 Ceramic: 8 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2270 B195CAAD00822 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2272 B195CAAD00822 Ceramic: 8 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2273 B195CAAD00823 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2273 B195CAAD00883 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2274 B195CAAD00883 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. 2276 B195CAAD00832 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. 2282 B195CAAD00852 Ceramic: 20 pf ±50 VDCW, temp coef 0±30 PPM. 2284 B195CAAD00852 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2284 B195CAAD00854 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2285 B195CAAD00854 Ceramic: 20 pf ±5% 50 VDCW, temp coef 15%.	SYMBOL	EGE PART NO.	DESCRIPTION
2266 B19/5CAAD00962 Ceramic: 5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2267 B19/5CAAD00961 Ceramic: 4 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2267 B19/5CAAD00964 Ceramic: 4 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2269 B19/5CAAD00863 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2270 B19/5CAAD00862 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2271 B19/5CAAD00868 Ceramic: 7 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2272 B19/5CAAD00888 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2273 B19/5CAAD00888 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2274 B19/5CAAD00888 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2281 B19/5CAAD00888 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). 2282 B19/5CAAD00888 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 2284 B19/5CAAD00888 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2285 B19/5CAAD00898 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2286 B19/5CAAD00888 Ceramic: 20 pf ±5% 50 VDC	C263 and C264	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$
2266 B19/5CAD00951 Caramic 7 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2267 B19/5CAD00964 Ceramic: 4 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2269 B19/5CAD00964 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2270 B19/5CAD00962 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2271 B19/5CAD00964 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2273 B19/5CAD00964 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2273 B19/5CAD00968 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2274 B19/5CAD00968 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2275 B19/5CAD00968 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2282 B19/5CAD00954 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2284 B19/5CAD00954 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2285 B19/5CAD00954 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2286 B19/5CAD00954 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2287 B19/5CAD00954 Ceramic: 20 pf ±	2266	B19/5CAAD00962	Ceramic: 6 pE 0.5 pE 50 VDCW, temp coef 0+30 PPM (Used in A).
2267 B19/5CAAD00961 Ceramic: 4 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2267 B19/5CAAD00843 Ceramic: B pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2270 B19/5CAAD00962 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2271 B19/5CAAD00951 Ceramic: 6 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2272 B19/5CAAD00951 Ceramic: 7 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2273 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2274 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2282 B19/5CAAD00852 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2284 B19/5CAAD00852 Ceramic: 32 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2284 B19/5CAAD00854 Ceramic: 32 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2285 B19/5CAAD00843 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2286 B19/5CAAD00844 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2287 B19/5CAAD00949 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2288 B19/5CAAD00947 Ceramic: 27 pf ±5% 50 VDCW, temp coef 0±30	266	B19/5CAAD00951	Ceramic: 7 pF 0.5 pF 50 VDCW temp coef 0±30 PPM (Used in B).
2247 B19/5CAAD00944 Ceramic: 8 pF 0.5pF 50 VDCW, temp coef 0±30 PPM (Used in B), 2249 B19/5CAAD00938 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in A), 2272 B19/5CAAD00964 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B), 2273 B19/5CAAD00968 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in B), 2274 B19/5CAAD00988 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in B), 2275 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in B), 2276 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in B), 2282 B19/5CAAD00852 Ceramic: 20 pF ±0 VDCW, temp coef 0±30 PPM (Used in B), 2282 B19/5CAAD00954 Ceramic: 20 pF ±0 VDCW, temp coef 0±30 PPM (Used in B), 2283 B19/5CAAD00954 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2284 B19/5CAAD00954 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2285 B19/5CAAD00949 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2286 B19/5CAAD00949 Ceramic: 27 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2287 B19/5CAAD00951 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM.	267	B19/5CAAD00961	Ceramic: 4 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A).
2299 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef ±15%. 2272 B19/5CAAD00962 Ceramic: 8 pf 0.5 pf 50 VDCW, temp coef ±30 PPM (Used in B). 2273 B19/5CAAD00961 Ceramic: 8 pf 0.5 pf 50 VDCW, temp coef ±30 PPM (Used in B). 2273 B19/5CAAD00968 Ceramic: 12 pf ±5%. 50 VDCW, temp coef ±30 PPM (Used in B). 2274 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef ±15%. 2275 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef ±15%. 2276 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef ±15%. 2281 B19/5CAAD00852 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef ±15%. 2282 B19/5CAAD00956 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef ±15%. 2283 B19/5CAAD00954 Ceramic: 20 pf ±5% 50 VDCW, temp coef ±15%. 2284 B19/5CAAD00954 Ceramic: 20 pf ±0% 50 VDCW, temp coef ±15%. 2285 B19/5CAAD00954 Ceramic: 20 pf ±0% 50 VDCW, temp coef ±15%. 2286 B19/5CAAD00954 Ceramic: 20 pf ±0% 50 VDCW, temp coef ±15%. 2287 B19/5CAAD00954 Ceramic: 20 pf ±0% 50 VDCW, temp coef ±15%. 2288 B19/5CAAD00954 Ceramic: 20 pf ±0% 50 V	2267	B19/5CAAD00964	Ceramic: 8 pF 0.5pF 50 VDCW, temp coef 0±30 PPM (Used in B).
2272 B19/SCAAD00964 Ceramic: 6 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used In A). 2273 B19/SCAAD00951 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used In B). 2273 B19/SCAAD00968 Ceramic: 12 pF ±5%. 50 VDCW, temp coef 0±30 PPM (Used In B). 2274 B19/SCAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used In B). 2275 B19/SCAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. (Used In A). 2280 B19/SCAAD00961 Ceramic: 1000 pF ±0% 50 VDCW, temp coef 0±30 PPM. (Used In A). 2281 B19/SCAAD00954 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In B). 2282 B19/SCAAD00954 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In B). 2283 B19/SCAAD00954 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In B). 2284 B19/SCAAD00944 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In A). 2285 B19/SCAAD00947 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In B). 2286 B19/SCAAD00947 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In B). 2287 B19/SCAAD00951 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used In B). 2288 B19/SCAAD00952 <	C269 and C270	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
2272 B19/SCAAD00964 Ceramic: 8 pF 0.5pF 50 VDCW, temp coef 0±30 PPM (Used in A). 2273 B19/SCAAD00951 Ceramic: 12 pf ±5%. 50 VDCW, temp coef 0±30 PPM (Used in B). 2273 B19/SCAAD00968 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2276 B19/SCAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. 2280 B19/SCAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. 2281 B19/SCAAD00950 Ceramic: 20 pf ±0% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2282 B19/SCAAD00956 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2283 B19/SCAAD00956 Ceramic: 20 pf ±5% 50 VDCW, temp coef 15%. 2284 B19/SCAAD00956 Ceramic: 22 pf ±5% 50 VDCW, temp coef 15%. 2285 B19/SCAAD00954 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2286 B19/SCAAD00947 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2287 B19/SCAAD00947 Ceramic: 27 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2288 B19/SCAAD00947 Ceramic: 100 pf ±10% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2290 B19/SCAAD00943 Ceramic: 10 pf ±0% 50 VDCW, temp coef 0±30 PPM. (Used in A). <	272	B19/5CAAD00962	Ceramic: 6 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in A).
2273 B19/5CAAD00951 Ceramic: 7 pf 0.5 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2273 B19/5CAAD00868 Ceramic: 12 pf ±5%. 50 VDCW, temp coef 0±30 PPM (Used in B). 2276 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2280 B19/5CAAD00852 Ceramic: 4 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2282 B19/5CAAD00956 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in A). 2284 B19/5CAAD00956 Ceramic: 3 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in B). 2285 B19/5CAAD00956 Ceramic: 3 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2286 B19/5CAAD00954 Ceramic: 3 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2286 B19/5CAAD00947 Ceramic: 2 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. (Used in A). 2288 B19/5CAAD00947 Ceramic: 2 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2289 B19/5CAAD00951 Ceramic: 17 pf 5 ±5% 50 VDCW, temp coef 1±30 PPM. (Used in A). 2290 B19/5CAAD00952 Ceramic: 17 pf ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 2291 B19/5CAAD00953 Ceramic: 17 pf ±5% 50 VDCW, temp coef 1±5%. 2292 B19/5CAAD000838 Ceramic: 1	272	B19/5CAAD00964	Ceramic: 8 pF 0.5pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B).
2273 B19/SCAAD00968 Ceramic: 12 pf ±5%. 50 VDCW, temp coef 0±30 PPM (Used in B). 2275 B19/SCAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef 0±30 PPM. 2280 B19/SCAAD00832 Ceramic: 1 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. 2281 B19/SCAAD00950 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. 2282 B19/SCAAD00954 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. 2283 B19/SCAAD00954 Ceramic: 3 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2284 B19/SCAAD00954 Ceramic: 3 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2285 B19/SCAAD00954 Ceramic: 3 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2286 B19/SCAAD00940 Ceramic: 20 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. 2287 B19/SCAAD00940 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2288 B19/SCAAD00940 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2289 B19/SCAAD00951 Ceramic: 22 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2291 B19/SCAAD00952 Ceramic: 12 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2292 B19/SCAAD00953 Ceramic: 12 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2294 B19/SCAAD000852 Ceram	2273	B19/5CAAD00951	Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A).
2275 B19/5CAAD00838 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$. 2280 B19/5CAAD00832 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2281 B19/5CAAD00956 Ceramic: 3 pf ± 0.25 pf 50 VDCW, temp coef ± 30 PPM. 2282 B19/5CAAD00956 Ceramic: 20 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2283 B19/5CAAD00956 Ceramic: 20 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2284 B19/5CAAD00954 Ceramic: 220 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2285 B19/5CAAD00954 Ceramic: 22 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2286 B19/5CAAD00947 Ceramic: 22 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 2287 B19/5CAAD00947 Ceramic: 22 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 2288 B19/5CAAD00947 Ceramic: 27 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2289 B19/5CAAD00940 Ceramic: 17 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2290 B19/5CAAD00840 Ceramic: 17 pf $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2291 B19/5CAAD00852 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2292 B19/5CAAD00853 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2294	2273	B19/5CAAD00968	Ceramic: 12 pF $\pm 5\%$. 50 VDCW, temp coef 0±30 PPM (Used in B).
2280 B19/5CAAD00838 Ceramic: 1000 pf ±10% 50 VDCW, temp coef ±15%. 2281 B19/5CAAD00852 Ceramic: 1 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. 2282 B19/5CAAD00954 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM. 2283 B19/5CAAD00954 Ceramic: 200 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2284 B19/5CAAD00838 Ceramic: 200 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2284 B19/5CAAD00644 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2285 B19/5CAAD00644 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2286 B19/5CAAD00940 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2287 B19/5CAAD00940 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2288 B19/5CAAD00947 Ceramic: 20 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2289 B19/5CAAD00951 Ceramic: 21 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2290 B19/5CAAD00838 Ceramic: 12 pf ±10% 50 VDCW, temp coef 0±30 PPM. 2291 B19/5CAAD00838 Ceramic: 12 pf ±5% 50 VDCW, temp coef 0±30 PPM. 2292 B19/5CAAD00838 Ceramic: 12 pf ±0% 50 VDCW, temp coef 0±30 PPM. 2293 B19/5CAAD00852 Ceramic: 18 pf ±5% 50 VDCW	C275 and C276	B19/5CAAD00838	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.
E281 B19/5CAAD00952 Ceramic: 1 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM. C282 B19/5CAAD00956 Ceramic: 4 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM. (Used in A). C283 B19/5CAAD00956 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. C284 B19/5CAAD00956 Ceramic: 20 pF ±5% 50 VDCW, temp coef 0±30 PPM. C285 B19/5CAAD00950 Ceramic: 33 pF ±5% 50 VDCW, temp coef 0±30 PPM. C286 B19/5CAAD00940 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. C287 B19/5CAAD00940 Ceramic: 82 pF ±5% 50 VDCW, temp coef 0±30 PPM. C288 B19/5CAAD00940 Ceramic: 62 pF ±5% 50 VDCW, temp coef 0±30 PPM. C289 B19/5CAAD00951 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. C289 B19/5CAAD00840 Ceramic: 12 pF ±10% 50 VDCW, temp coef 0±30 PPM. C290 B19/5CAAD00852 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. C291 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. C292 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. C293 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. C294 B19/5CAAD00836 Ce	2280	B19/5CAAD00838	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.
2282 B19/5CAAD00961 Ceramic: 4 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2283 B19/5CAAD00956 Ceramic: 5 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in B). 2283 B19/5CAAD00954 Ceramic: 20 pF $\pm 5\%$ 50 VDCW, temp coef -750120 PPM. 2284 B19/5CAAD00947 Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef -750120 PPM. 2285 B19/5CAAD00949 Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef -4530 PPM. 2286 B19/5CAAD00949 Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 2288 B19/5CAAD00940 Ceramic: 20 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2288 B19/5CAAD00951 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in B). 2289 B19/5CAAD00840 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2291 B19/5CAAD00838 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM (Used in A). 2292 B19/5CAAD00852 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2294 B19/5CAAD00852 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2295 B19/5CAAD00838 Ceramic: 100 pF $\pm 0\%$ 50 VDCW, temp coef ± 30 PPM. 2296 B19/5CAAD00836 Ce	2281	B19/5CAAD00852	Ceramic: 1 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM.
2282 B19/5CAAD00956 Ceramic: 5 pf ±0.25 pf 50 VDCW, temp coef 0±30 PPM (Used in B). 2283 B19/5CAAD00838 Ceramic: 220 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2284 B19/5CAAD00838 Ceramic: 220 pF ±5% 50 VDCW, temp coef -750120 PPM. 2285 B19/5CAAD00947 Ceramic: 22 pF ±5% 50 VDCW, temp coef -750120 PPM. 2286 B19/5CAAD00949 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2287 B19/5CAAD00947 Ceramic: 82 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 2288 B19/5CAAD00947 Ceramic: 82 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 2289 B19/5CAAD00951 Ceramic: 27 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B). 2290 B19/5CAAD00840 Ceramic: 27 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 2291 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2292 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2294 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2295 B19/5CAAD00852 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2296 B19/5CAAD00853 Ceramic: 100 pF ±10% 50 VDCW, temp coef 0±30 PPM.	282	B19/5CAAD00961	Ceramic: 4 pF ± 0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A).
2283 B19/5CAAD00954 Ceramic: 20 p ±5% 50 VDCW, temp coef ±30 PPM. 2284 B19/5CAAD00838 Ceramic: 33 p ±5% 50 VDCW, temp coef ±15%. 2285 B19/5CAAD00147 Ceramic: 22 p ±5% 50 VDCW, temp coef ±15%. 2286 B19/5CAAD00949 Ceramic: 22 p ±5% 50 VDCW, temp coef 0±30 PPM. 2287 B19/5CAAD00940 Ceramic: 2 p ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 2288 B19/5CAAD00947 Ceramic: 2 p ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). 2289 B19/5CAAD00840 Ceramic: 22 p ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). 2290 B19/5CAAD00840 Ceramic: 21 p ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). 2291 B19/5CAAD008438 Ceramic: 1000 p ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2293 B19/5CAAD00852 Ceramic: 1000 p ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2294 B19/5CAAD00852 Ceramic: 1000 p ±10% 50 VDCW, temp coef 0±30 PPM. 2295 B19/5CAAD00852 Ceramic: 1000 p ±10% 50 VDCW, temp coef 0±30 PPM. 2296 B19/5CAAD00853 Ceramic: 18 p ±5% 50 VDCW, temp coef 0±30 PPM. 22101 B19/5CAAD00863 Ceramic: 18 p ±5% 50 VDCW, temp coef 0±30 PPM. 22102 B19/5CAAD00950 Ceramic: 18 p ±5% 50 VDCW, temp coef 0±30 PPM. <td>282</td> <td>B19/5CAAD00956</td> <td>Ceramic: 5 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in B).</td>	282	B19/5CAAD00956	Ceramic: 5 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in B).
224 B19/5CAAD00838 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef \pm 15%. 2285 B19/5CAAD00838 Ceramic: 22 pf \pm 5% 50 VDCW, temp coef $-$ 750120 PPM. 2286 B19/5CAAD00940 Ceramic: 22 pf \pm 5% 50 VDCW, temp coef $0\pm$ 30 PPM. 2287 B19/5CAAD00940 Ceramic: 22 pf \pm 5% 50 VDCW, temp coef $0\pm$ 30 PPM (Used in A). 2288 B19/5CAAD00947 Ceramic: 22 pf \pm 5% 50 VDCW, temp coef $0\pm$ 30 PPM (Used in B). 2289 B19/5CAAD00840 Ceramic: 22 pf \pm 5% 50 VDCW, temp coef $0\pm$ 30 PPM (Used in B). 2291 B19/5CAAD00840 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef $0\pm$ 30 PPM (Used in A). 2293 B19/5CAAD00852 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef $0\pm$ 30 PPM (Used in A). 2293 B19/5CAAD00852 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef $0\pm$ 30 PPM (Used in A). 2294 B19/5CAAD00852 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef $0\pm$ 30 PPM. 2295 B19/5CAAD00838 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef $0\pm$ 30 PPM. 2296 B19/5CAAD00853 Ceramic: 1000 pf \pm 10% 50 VDCW, temp coef $0\pm$ 30 PPM. 2296 B19/5CAAD00853 Ceramic: 12 pf \pm 5% 50 VDCW, temp coef $0\pm$ 30 PPM. 22104 B19/5CAAD00963 Ceramic: 18 pf \pm 5% 50 VDCW, temp coef $0\pm$ 30 PPM. 22105 <	283	B19/5CAAD00954	Ceramic: 220 pF ±5% 50 VDCW, temp coef 0±30 PPM.
2285 B19/5CAAD018/4 Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef -750120 PPM. 2286 B19/5CAAD00940 Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 2287 B19/5CAAD00940 Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 2288 B19/5CAAD00947 Ceramic: 82 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2288 B19/5CAAD00951 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in B). 2290 B19/5CAAD00952 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2291 B19/5CAAD00952 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2293 B19/5CAAD00838 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM (Used in A). 2294 B19/5CAAD00852 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM (Used in B). 2294 B19/5CAAD00853 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2295 B19/5CAAD00854 Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 2296 B19/5CAAD00856 Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 22101 B19/5CAAD00963 Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef ± 30 PPM. 22102 B19/5CAAD00963 Ceramic: 18	2284	B19/5CAAD00838	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coet \pm 15%.
2280 $B19/5CAD00014$ Ceramic: $2 p \pm 5x^3 = 50 + 00000000000000000000000000000000$	285	B19/5CAAD01674	Ceramic: 33 pF \pm 5% 50 VDCW, temp coef -750120 PPM.
2207 E19/35AAD00949 Ceramic: 82 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 2288 B19/5CAAD00947 Ceramic: 68 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). 2289 B19/5CAAD00951 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B). 2290 B19/5CAAD00840 Ceramic: 22 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). 2291 B19/5CAAD00952 Ceramic: 27 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 2292 B19/5CAAD00952 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2293 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in A). 2294 B19/5CAAD00832 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM (Used in B). 2294 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2296 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 22010 B19/5CAAD00963 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22101 B19/5CAAD00963 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22102 B19/5CAAD00963 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22104 B19/5CAAD00964 Ceramic: 12 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 22105 B19/5CAAD00968	280	B19/5CZAJ00014	Ceramic: $22 \text{ pF} \pm 5\% 50 \text{ VDCW}$, temp coef -750120 PPM .
2200 Clearantic. 22 pf $\pm 3x$ 50 VOCW, temp coef 0 ± 30 PPM (Used in A). 2288 B19/5CAAD00947 Ceramic: 8 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in B). 2290 B19/5CAAD00840 Ceramic: 22 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in B). 2291 B19/5CAAD00838 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2293 B19/5CAAD00852 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 2294 B19/5CAAD00852 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$. 2295 B19/5CAAD00852 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2296 B19/5CAAD00838 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2297 B19/5CAAD00838 Ceramic: 1000 pf $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 2298 B19/5CAAD00838 Ceramic: 100 pF $\pm 10\%$ 50 VDCW, temp coef ± 30 PPM. 22100 B19/5CAAD00963 Ceramic: 13 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22101 B19/5CAAD00963 Ceramic: 12 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22102 B19/5CAAD00963 Ceramic: 12 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22103 B19/5CAAD00964 Ceramic: 12 pf $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 P	287	B19/5CAAD00949	Ceramic: $2 \text{ pF} \pm 0.25 \text{ pF} 50 \text{ VDCW, temp coel } 0\pm 30 \text{ PPM.}$
2200 D1/JSCAAD00971 Ceramic: 7 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B). 2289 B19/SCAAD00840 Ceramic: 2 pF ±5% 50 VDCW, temp coef 0±30 PPM. 2291 B19/SCAAD00840 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2292 B19/SCAAD00852 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2293 B19/SCAAD00852 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2294 B19/SCAAD00852 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2295 B19/SCAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2296 B19/SCAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2297 B19/SCAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2298 B19/SCAAD00838 Ceramic: 10 pF ±20% 10 VDCW. 22001 B19/SCAAD00963 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22101 B19/SCAAD00964 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22102 B19/SCAAD00964 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 22104 B19/SCAAD00963 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 22105 B19/SCAAD00963	200	B19/5CAAD00900	Ceramic: 62 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A).
2291B19/SCAAD00840Ceramic: 22 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.2291B19/SCAAD00838Ceramic: 22 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.2292B19/SCAAD00952Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM (Used in A).2293B19/SCAAD00963Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).2294B19/SCAAD00838Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in B).2295B19/SCAAD00852Ceramic: 1 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM.2296B19/SCAAD00838Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM.2297B19/SCAAD00838Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM.2298B19/SCAAD00832Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.2299B19/SCAAD00963Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22001B19/SCAAD00963Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22102B19/SCAAD00964Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22104B19/SCAAD00966Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22105B19/SCAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22104B19/SCAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22105B19/SCAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22106B19/SCAAD00853Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22107B19/SCAAD00853Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM.22108B19/SCAAD00853Ceramic: 15 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM. <td>2200</td> <td>B19/5CAAD00947</td> <td>Ceramic: 7 nE 0.5 nE 50 VDCW, temp coef 0 ± 30 PPM (Used in B).</td>	2200	B19/5CAAD00947	Ceramic: 7 nE 0.5 nE 50 VDCW, temp coef 0 ± 30 PPM (Used in B).
2291DifferenceDifference2291B19/5CAAD00838Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.2293B19/5CAAD00952Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).2294B19/5CAAD00838Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. (Used in B).2294B19/5CAAD00822Ceramic: 1000 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM.2296B19/5CAAD00832Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM.2298B19/5CAAD00838Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM.2299B19/5CAAD00963Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM.22101B19/5CAAD00963Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM.22102B19/5CAAD00963Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM.22104B19/5CAAD00963Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM.22104B19/5CAAD00964Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM.22104B19/5CAAD00968Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0±30 PPM (Used in A).22105B19/5CAAD00968Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0±30 PPM (Used in A).22106B19/5CAAD00853Ceramic: 13 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A).22107B19/5CAAD00853Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).22110B19/5CAAD00853Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).22111B19/5CAAD00853Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).22113B19/5CAAD00853Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).22113 <td>2207</td> <td>B19/5CAAD00840</td> <td>Ceramic: 22 pE +5% 50 VDCW, temp coef 0+30 PPM</td>	2207	B19/5CAAD00840	Ceramic: 22 pE +5% 50 VDCW, temp coef 0+30 PPM
2293B19/5CAAD00952Ceramic: 27 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).2293B19/5CAAD00838Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in B).2294B19/5CAAD00838Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM.2295B19/5CAAD00852Ceramic: 1 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM.2296B19/5CAAD00838Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM.2297B19/5CAAD00838Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM.2298B19/5CAAD00963Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22001B19/5CAAD00963Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22102B19/5CAAD00963Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22103B19/5CAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM.22104B19/5CAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22105B19/5CAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22106B19/5CAAD00968Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22107B19/5CAAD00853Ceramic: 13 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM (Used in A).22108B19/5CAAD00853Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22109B19/5CAAD00858Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22111B19/5CAAD00858Ceramic: 15 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22112B19/5CAAD00858Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A).22113 <td>2291 and 2292</td> <td>B19/5CAAD00838</td> <td>Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.</td>	2291 and 2292	B19/5CAAD00838	Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.
2293 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in B). 2294 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM. 2295 B19/5CAAD00832 Ceramic: 1 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM. 2296 B19/5CAAD00838 Ceramic: 1 000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM. 2298 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM. 22001 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM. 22100 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM. 22101 B19/5CAAD00963 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM. 22102 B19/5CAAD00968 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A). 22103 B19/5CAAD00968 Ceramic: 12 pF 50 VDCW, temp coef \pm 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM (Used in A). 22106 B19/5CAAD00853 Ceramic: 13 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM (Used in A). 22108 B19/5CAAD00858 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A). 22110 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp co	293	B19/5CAAD00952	Ceramic: 27 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).
2294 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. 2295 B19/5CAAD00852 Ceramic: 1 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM. 2296 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 2298 B19/5CAAD00933 Ceramic: 1000 pF ±10% 50 VDCW, temp coef 0±30 PPM. 22001 B19/5CAAD00963 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22102 B19/5CAAD00963 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22104 B19/5CAAD00963 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22104 B19/5CAAD00968 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 22105 B19/5CAAD00968 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 13 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 22107 B19/5CAAD00858 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 22108 B19/5CAAD00858 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 22110 B19/5CAAD00858 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).	293	B19/5CAAD00963	Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B).
2295 B19/5CAAD00852 Ceramic: 1 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM. 2296 B19/5CAAD00838 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$. 2298 B19/5CAAD00838 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$. 22001 B19/5CAAD00963 Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22100 B19/5CAAD00950 Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22101 B19/5CAAD00963 Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22102 B19/5CAAD00963 Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM. 22104 B19/5CAAD00968 Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22106 B19/5CAAD00853 Ceramic: 13 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22107 B19/5CAAD00858 Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22111 B19/5CAAD00858 Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22111 B19/5CAAD00950	294	B19/5CAAD00838	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.
2296 hru 2298B19/5CAAD00838Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.22001B19/5CAAD00963Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM.22100B19/5CAAD00950Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM.22101B19/5CAAD00963Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM.22102B19/5CAAD00963Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22104B19/5CAAD00964Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22105B19/5CAAD00968Ceramic: 12 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22106B19/5CAAD00953Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in B).22108B19/5CAAD00853Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22109B19/5CAAD00853Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22111B19/5CAAD00850Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22112B19/5CAAD00950Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22113B19/5CAAD00853Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22113B19/5CAAD00853Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22113B19/5CAAD00853Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22113B19/5CAAD00853Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A).22113B19/5CAAD00853Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM.22114B19/5CAAD00853<	295	B19/5CAAD00852	Ceramic: 1 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM.
22001 B19/5CSAC01768 Tantalun: 10 μF ±20% 10 VDCW. 22100 B19/5CAAD00963 Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22101 B19/5CAAD00963 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22102 B19/5CAAD00963 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22104 B19/5CAAD00968 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM. (Used in A). 22104 B19/5CAAD00968 Ceramic: 12 pF 50 VDCW, temp coef 0±30 PPM (Used in B). 22105 B19/5CAAD00968 Ceramic: 12 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B). 22107 B19/5CAAD00853 Ceramic: 10 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 15 pF ±5% 50 VDCW, temp coef ±15%. 22110 B19/5CAAD00838 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). 22112 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22111 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM. 22113	C296 hru C298	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
22100 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22101 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22102 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22104 B19/5CAAD00968 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22104 B19/5CAAD00964 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22105 B19/5CAAD00968 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22107 B19/5CAAD00853 Ceramic: 10 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22112 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22113 B19/5CAAD00853 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22113 B19/5CAAD00853	22001	B19/5CSAC01768	Tantalun: 10 μ F ±20% 10 VDCW.
22101 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22102 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22104 B19/5CAAD00968 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. (Used in A). 22104 B19/5CAAD00964 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22105 B19/5CAAD00968 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22107 B19/5CAAD00853 Ceramic: 10 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22112 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22113 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22114 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM. 22113 B19/5CAAD00838	22100	B19/5CAAD00963	Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM.
22102 B19/5CAAD00963 Ceramic: 18 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22104 B19/5CAAD00968 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22104 B19/5CAAD00964 Ceramic: 8 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22105 B19/5CAAD00968 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22107 B19/5CAAD00838 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22112 B19/5CAAD00950 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM. 22113 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22114	2101	B19/5CAAD00950	Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM.
22104 B19/5CAAD00968 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22104 B19/5CAAD00964 Ceramic: 8 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22105 B19/5CAAD00968 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22106 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22106 B19/5CAAD00853 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22107 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22112 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22113 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22114 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A).	22102	B19/5CAAD00963	Ceramic: 18 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM.
22104 B19/5CAAD00964 Ceramic: 8 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22105 B19/5CAAD00968 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22106 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22107 B19/5CAAD00838 Ceramic: 10 op F \pm 10% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22109 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22112 B19/5CAAD00950 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM. 22113 B19/5CAAD00853 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM. 22113 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM. 22114 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM. 22115 B19/5CAAD008	22104	B19/5CAAD00968	Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0±30 PPM (Used in A).
22105 B19/5CAAD00968 Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22107 B19/5CAAD00838 Ceramic: 10 op F \pm 10% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 30 PPM (Used in A). 22109 B19/5CAAD00950 Ceramic: 15 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22112 B19/5CAAD00950 Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in B). 22113 B19/5CAAD00950 Ceramic: 13 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22113 B19/5CAAD00833 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef 0 \pm 30 PPM (Used in A). 22114 B19/5CAAD00838 Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coef \pm 30 PPM (Used in A). 22115 B19/5CAAD00838 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%. and Zi116 Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.	22104	B19/5CAAD00964	Ceramic: 8 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B).
22105 B19/5CAAD00953 Ceramic: 10 pF 0.5 pF 50 VDCW, temp coel 0±30 PPM (Used in B). 22106 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coel 0±30 PPM (Used in A). 22107 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coel 0±30 PPM (Used in A). 22108 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coel 0±30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coel 0±30 PPM (Used in A). 22111 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coel 0±30 PPM (Used in B). 22112 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coel 0±30 PPM (Used in B). 22113 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coel 0±30 PPM (Used in A). 22114 B19/5CAAD00838 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coel 0±30 PPM (Used in A). 22115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coel ±15%.	22105	B19/5CAAD00968	Ceramic: 12 pF 5 pF 50 VDCW, temp coef 0±30 PPM (Used in A).
22106 B19/SCAAD00853 Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22107 B19/SCAAD00838 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$. 22108 B19/SCAAD00950 Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22111 B19/SCAAD00950 Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22112 B19/SCAAD00950 Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 0 ± 30 PPM (Used in B). 22113 B19/SCAAD00950 Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22114 B19/SCAAD00838 Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0 ± 30 PPM (Used in A). 22115 B19/SCAAD00838 Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%$.	22105	B19/5CAAD00953	Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 0±30 PPM (Used in B).
C2108 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. C2109 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). C2111 B19/5CAAD00968 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). C2112 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM. C2113 B19/5CAAD00850 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM. C2114 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). C2115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. <td>2106 and 22107</td> <td>B19/5CAAD00853</td> <td>Ceramic: 3 pF \pm0.25 pF 50 VDCW, temp coer $0\pm$30 PPM (Used in A).</td>	2106 and 22107	B19/5CAAD00853	Ceramic: 3 pF \pm 0.25 pF 50 VDCW, temp coer $0\pm$ 30 PPM (Used in A).
C2111 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A). C2111 B19/5CAAD00968 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). C2112 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). C2113 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). C2114 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. C2115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.	C2108 and C2109	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
C2111 B19/5CAAD00968 Ceramic: 12 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B). C2112 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM. C2113 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). C2114 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. C2115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.	22111	B19/5CAAD00950	Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in A).
C2112 B19/5CAAD00950 Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM. C2113 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). C2114 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. C2115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.	C2111	B19/5CAAD00968	Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 0±30 PPM (Used in B).
C2113 B19/5CAAD00853 Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A). C2114 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%. C2115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.	22112	B19/5CAAD00950	Ceramic: 15 pF ±5% 50 VDCW, temp coef 0±30 PPM.
C2115 B19/5CAAD00838 Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.	C2113 and C2114	B19/5CAAD00853	Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0±30 PPM (Used in A).
	C2115 and C2116	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$

PARTS LIST

SYMBOL	EGE PART NO.	DESCRIPTION		
C2118	B19/5CAAD00952	Ceramic: 27 pF \pm 5% 50 VDCW, temp coef 0 \pm 30 PPM (Used in A).		
C2118	B19/5CAAD00963	Ceramic: 18 pF ±5% 50 VDCW, temp coef 0±30 PPM (Used in B).		
C2119	B19/5CAAD00952	Ceramic: 27 pF ±5% 50 VDCW, temp coef 0±30 PPM.		
C2120	B19/5CAAD00853	Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coef 0±30 PPM		
and		(Used in A).		
C2121 C2122 and	B19/5CAAD00838	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$		
C2123				
C2201 C2304	B19/5CAAD00950 B19/5CAAD00838	Ceramic: 15 pF \pm 5% 50 VDCW, temp coef \pm 30 PPM. Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.		
		DIODES		
CD201	B19/5TXAE00891	Zener: 4.0 V; sim to HITACHI HZM3.9NB2.		
CD202	B19/5TXAD00320	Silicon: fast recovery (2 diodes in series); sim to TOSHIBA 1SS226.		
CD203	B19/5TXAE00897	Zener: 3.0 V; sim to HITACHI HZK3B.		
CD204	B19/5TXAD00320	Silicon: fast recovery (2 diodes in series); sim to TOSHIBA 1SS226.		
CD205	B19/5TXAD00356	Silicon: fast recovery(2 diodes with anode common); sim to TOSHIBA 1SS181.		
CD241	B19/5TXAD00803	Silicon: Variable Capacitance Diode: sim to TOSHIBA ISV228.		
CD242	B19/5TXAE00912	Silicon: (Schottky Barrier); sim to HITACHI HSU88.		
CD243	B19/5TXCW00087	Silicon: Epitaxial Planer Diode: sim to ROHM 1SS318.		
CD248				
CD281	B19/5TXAV00114	Silicon: fast recovery (2 diodes in series); sim to PANA- SONIC MA153A.		
CD282	B19/5TXAE00918	Silicon: Variable Capacitance Diode; sim to HITACHI HVU202.		
CD283	B19/5TXAD00803	Silicon: Variable Capacitance Diode: sim to TOSHIBA ISV228.		
CD284	B19/5TXAE00912	Silicon: (Schottky Barrier); sim to HITACHI HSU88.		
CD285 thru CD290	B19/5TXCW00087	Silicon: Epitaxial Planer Diode: sim to ROHM 1SS318.		
CV240	B19/5CVAV00003	Variable: 10 pF max.		
CV280	B19/5CVAV00003	Variable: 10 pF max.		
FL204	B19/5NXAA00081	EMI Filter:		
		INTEGRATED CIRCUITS		
IC201	B19/5DAAJ00861	Synthesizer: CMOS serial input; sim to MOTOROLA MC145159FN.		
IC202	B19/5DDAB00515	Linear: Dual OP AMP; sim to MITSUBISHI M5223FP.		
IC203	B19/5DAAN00368	Linear: Dual OP AMP; sim to New JRC NJM3404AM.		
IC204	B19/5DAAJ00629	Digital: Bilateral switch sim to MOTOROLA MC14066BF.		
IC205	B19/5DDAS00232	Prescaler: sim to MOTOROLA MC12022SLAD.		
IC206	B19/5DAAA00284	RF Wide bend amplifier; sim to NEC UPC1676G.		
IC207	B19/5DDAB00516	Linear: Dual Comparator; sim to MITSUBISHI M5233FP.		
IC208	B19/5DAAJ00985	Digital: Decoder; sim to MOTOROLA MC74HC237F.		
IC209	B19/5DAAJ00629	Digital: Bilateral switch sim to MOTOROLA MC14066BF.		
IC230	B19/5DAAR00021	Linear: Positive Voltage Regulator; sim to PANASONIC AN6541.		
1 201	B19/5I CAA00813	COILS Choke Coil: 4 7 µH +10%		
1 220	B19/5I CAP00240	Coll RF: 33 μ H +10%		
L230	B19/5LCAA00813	Choke Coil: $4.7 \mu\text{H} \pm 10\%$.		
L240 and	B19/5LCAC01369	Choke Coil: 0.68 μ H ±10%.		
L241				
L242	B19/6LALD00171	Coll RF (Used in A).		
L242	B19/6LALD00173	Coil RF (Used in B).		
L243	B19/5LCAC01370	Choke Coil: 1μ H ±10%.		
L244	B19/5LCAC01369	Choke Coil: $0.68 \mu\text{H} \pm 10\%$.		
L245	B19/5LCAP00276	Споке Coil: 1 µH ±20%.		
L240	B19/5LCAP00239	CUIL KF: ZZ μ H ±20%.		
L247	D19/3LCACU13/2	CHOKE COII: U.82 μΗ ±10%.		

MBOL	EGE PART NO.	DESCRIPTION
48	B19/5LCAC01372	Choke Coil: 0.82 μH ±10% (Used in A).
ʻu 52		
48	B19/5I CAC01369	Choke Coil: 0.68 uH +10% (Used in B)
ru	51,7626,667,667	
52	D10/51 01 0010/0	
d 80	B19/5LCAC01369	Choke Coll: 0.68 μ H ±10%.
81		
82	B19/6LALD00170	Coil RF (Used in A).
82	B19/6LALD00172	Coil RF (Used in B).
83	B19/5LCAC01372	Choke Coil: $0.82 \mu\text{H} \pm 10\%$.
84	B19/5LCAC01369	Choke Coil: 0.68 μ H ±10%.
85	B19/5LCAP00276	CHOKE COII: 1 μ H ±20%.
00	B19/5LCAP00239	Coll RF. 22 μ m $\pm 20\%$. Choko Coll: 1 μ H $\pm 10\%$ (Usod in A)
87	B19/5LCAC013/0	Choke Coil: $0.68 \text{ \muH} \pm 10\%$ (Used in R)
88	B19/5LCAC01369	Choke Coil: 0.68μ H +10%.
89	B19/5LCAC01370	Choke Coil: 1 μ H ±10% (Used in A).
89	B19/5LCAC01369	Choke Coil: 0.68 μH ±10% (Used in B).
90	B19/5LCAC01369	Choke Coil: 0.68 µH ±10% .
91	B19/5LCAC01370	Choke Coil: 1 µH ±10% (Used in A).
91	B19/5LCAC01369	Choke Coil: 0.68 μH ±10% (Used in B).
92	B19/5LCAC01369	Choke Coil: 0.68 µH ±10%.
001	D10/5D54002000	RESISTORS
201	B19/5REAG03228	Metal film: 22 chmc +5% 50 VDCW 1/16W.
202	B19/5REAG03600	Metal film: 150K ohms +5% 50 VDCW 1/16W
204	B19/5REAG03235	Metal film: 470K ohms ±5% 50 VDCW 1/16W
205	B19/5RDAC02455	Metal film: 150K ohms +5% 100 VDCW 1/10W.
206	B19/5REAG03445	Metal film: 2.2K ohms ±5% 50 VDCW 1/16W.
207	B19/5REAG03238	Metal film: 1M ohms ±5% 50 VDCW 1/16W.
208	B19/5REAG03445	Metal film: 2.2K ohms ±5% 50 VDCW 1/16W.
209	B19/5REAG03424	Metal film: 100 ohms ±5% 50 VDCW 1/16W.
210	B19/5REAG03235	Metal film: 470K ohms ±5% 50 VDCW 1/16W.
211	B19/5REAG03446	Metal film: 100K ohms ±5% 50 VDCW 1/16W.
213	B19/5REAG03378	Metal film: 0 ohm .
214	B19/5RDAC03109	Metal film: 330 ohms ±5% 200 VDCW 1/4W.
215	B19/5RDAC02445	Metal film: 10K ohms ±5% 100 VDCW 1/10W.
216	B19/5REAG03235	Metal film: 15% chmc J 5% 50 VDCW 1/16W.
217	B19/5REAG03425	Metal film: 6.8K ohms ±5% 50 VDCW 1/16W
010	B19/5REAG03631	Metal film: 15 ohms +5% 50 VDCW 1/16W
220	B19/5REAG03228	Metal film: 10K ohms $\pm 5\%$ 50 VDCW 1/16W.
ru		
224	P10/EDD4402240	Matal film, 220K above $\pm 5\%$ 50 VDCW 1/14W
20	B19/5RDAA02200	Metal film: 68K ohms +5% 50 VDCW 1/16W.
27	B19/5REAG03427	Metal film: 82K ohms ±5% 50 VDCW 1/16W (Used in R)
230	B19/5RFAG03353	Metal film: 3.9K ohms ±5% 50 VDCW 1/16W (Used in A).
230	B19/5REAG03425	Metal film: 15K ohms ±5% 50 VDCW 1/16W (Used in B).
231	B19/5REAG03230	Metal film: 22K ohms ±5% 50 VDCW 1/16W.
232	B19/5REAG03549	Metal film: 1.5K ohms ±5% 50 VDCW 1/16W.
233	B19/5REAG03230	Metal film: 22K ohms ±5% 50 VDCW 1/16W.
234	B19/5REAG03446	Metal film: 100K ohms ±5% 50 VDCW 1/16W.
235	B19/5REAG03228	Metal film: 10K ohms ±5% 50 VDCW 1/16W.
a 236		
237	B19/5REAG03377	Metal film: 4.7K ohms ±5% 50 VDCW 1/16W.
238	B19/5REAG03426	Metal film: 5.6K ohms ±5% 50 VDCW 1/16W.
239	B19/5RDAC02451	Metal film: 2.2K ohms ±5% 100 VDCW 1/10W.
241	B19/5RDAC02481	Metal film: 15K ohms ±5% 100 VDCW 1/10W.
242	B19/5RDAC02467	Metal film: 68 ohms ±5% 100 VDCW 1/10W.
243	B19/5RDAC02452	Metal film: 5.6K ohms ±5% 100 VDCW 1/10W.

SYMBOL	EGE PART NO.	DESCRIPTION	SYMBO	EGE
R244	B19/5RDAC02474	Metal film: 1.5K ohms ±5% 100 VDCW 1/10W.		
R245	B19/5RDAC02554	Metal film: 120 ohms ±5% 100 VDCW 1/10W.	TR201	B19/5
R246	B19/5RDAC02469	Metal film: 220 ohms $\pm 5\%$ 100 VDCW 1/10W (Used in A).	and	
R246	B19/5RDAC02578	Metal film: 180 ohms ±5% 100 VDCW 1/10W (Used in B).	TR202	
R247	B19/5RDAC02465	Metal film: 22 ohms ±5% 100 VDCW 1/10W (Used in A).	TR203	B19/5
R247	B19/5RDAC02466	Metal film: 33 ohms $\pm 5\%$ 100 VDCW 1/10W (Used in B).	TR230	B19/5
R248	B19/5RDAC02469	Metal film: 220 ohms ±5% 100 VDCW 1/10W (Used in A).	TR240	B19/5
R248	B19/5RDAC02578	Metal film: 180 ohms ±5% 100 VDCW 1/10W (Used in B).	TP2/1	B10/5
R249	B19/5RDAC02469	Metal film: 220 ohms ±5% 100 VDCW 1/10W.	TP2//2	B10/5
R280	B19/5RDAC02461	Metal film: 1M ohms ±5% 100 VDCW 1/10W.	and	DT//3
R281	B19/5RDAC02483	Metal film: 33K ohms ±5% 100 VDCW 1/10W.	TR243	
R282	B19/5RDAC02454	Metal film: 22K ohms ±5% 100 VDCW 1/10W.	TR280	B19/5
R283	B19/5RDAC02439	Metal film: 47K ohms ±5% 100 VDCW 1/10W.	TD201	D10/E
R284	B19/5RDAC02457	Metal film: 27K ohms ±5% 100 VDCW 1/10W.	TR281	B19/0
R286	B19/5RDAC02481	Metal film: 15K ohms ±5% 100 VDCW 1/10W.	TR282	B19/0
R287	B19/5RDAC02555	Metal film: 270 ohms ±5% 100 VDCW 1/10W.	thru	B19/0
R288	B19/5RDAC02452	Metal film: 5.6K ohms ±5% 100 VDCW 1/10W.	TR2303	
R289	B19/5RDAC02474	Metal film: 1.5K ohms ±5% 100 VDCW 1/10W.		
R290	B19/5RDAC02554	Metal film: 120 ohms ±5% 100 VDCW 1/10W.		
R291	B19/5RDAC02555	Metal film: 270 ohms ±5% 100 VDCW 1/10W .	XU201	B19/5
R292	B19/5RDAC02464	Metal film: 15 ohms ±5% 100 VDCW 1/10W.		
R293	B19/5RDAC02555	Metal film: 270 ohms ±5% 100 VDCW 1/16W .		
R294	B19/5RDAC02469	Metal film: 220 ohms ±5% 100 VDCW 1/10W .		
R295	B19/5RDAC02447	Metal film: 100 ohms $\pm 5\%$ 100 VDCW 1/10W .		
R296	B19/5RDAC02445	Metal film: 10K ohms ±5% 100 VDCW 1/10W .		
R2001	B19/5REAG03230	Metal film: 22K ohms $\pm 5\%$ 50 VDCW 1/16W .		
R2002	B19/5REAG03899	Metal film: 390K ohms $\pm 5\%$ 50 VDCW 1/16W (Used in A).		
R2002	B19/5REAG03638	Metal film: 560K ohms $\pm 5\%$ 50 VDCW 1/16W (Used in B).		
R2003	B19/5REAG03851	Metal film: 270K ohms $\pm 5\%$ 50 VDCW 1/16W (Used in A).		
R2003	B19/5REAG03601	Metal film: 180K ohms $\pm 5\%$ 50 VDCW 1/16W (Used in B).		
R2004	B19/5REAG03599	Metal film: 120K ohms $\pm 5\%$ 50 VDCW 1/16W (Used in A).		
R2004	B19/5REAG03427	Metal film: 82K ohms ±5% 50 VDCW 1/16W (Used in B).		
R2005	B19/5REAG03229	Metal film: 18K ohms ±5% 50 VDCW 1/16W (Used in A).		
R2005	B19/5REAG03233	Metal film: 47K ohms ±5% 50 VDCW 1/16W (Used in B).		
R2008	B19/5REAG03422	Metal film: 330 ohms ±5% 50 VDCW 1/16W.		
R2009	B19/5RDAC02581	Metal film: 0 ohm.		
R2011	B19/5REAG03238	Metal film: 1M ohms ±5% 50 VDCW 1/16W.		
R2012	B19/5RDAC02449	Metal film: 100K ohms ±5% 100 VDCW 1/10W.		
R2301 and R2302	B19/5REAG01738	Metal film: 1K ohms ±5% 200 VDCW 1/8W.		
R2303	B19/5RDAC02478	Metal film: 4.7K ohms ±5% 100 VDCW 1/10W.		
R2304	B19/5REAG01738	Metal film: 1K ohms ±5% 200 VDCW 1/8W.		
and R2305				
R2306	B19/5RDAC02478	Metal film: 4.7K ohms ±5% 100 VDCW 1/10W.		
R2307 and R2308	B19/5REAG01738	Metal film: 1K ohms ±5% 200 VDCW 1/8W.		
R2309	B19/5RDAC02478	Metal film: 4.7K ohms ±5% 100 VDCW 1/10W.		
R2310 thru	B19/5REAG03425	Metal film: 15K ohms ±5% 50 VDCW 1/16W.		
R2312 R2313 thru	B19/5REAG03232	Metal film: 39K ohms ±5% 50 VDCW 1/16W.		
R2401	B19/5PFAC02229	Metal film: 10K ohms +5% 50 VDCW/1/14W/		
P2/02	B10/50EAC02444	Metal film: 100K ohms +5% 50 VDCW 1/16W		
RV202	B19/5RVAF00077	Variable: 20K ohms $2\pm5\%$ 1/10W.		
		TEDMINIAL		
		TERIVIINAL		

MBOL	EGE PART NO.	DESCRIPTION
		TRANSISTORS
01	B19/5TBAB00055	Silicon, PNP; sim to NEC 2SB624 BV3.
02		
03	B19/5TKAK00029	Silicon, NPN; sim to PANASONIC XP1211.
30 40	B19/51DAB00054 B19/5TKAH00006	Nicon, NPN; Sim to NEC 25D596 DV3. N-channel, field effect.(Junction Singe Gate);sim to SONY
41		2SK125.
41	B19/5TCAB00288 B19/5TKAK00025	Silicon, NPN; sim to PANASONIC UN5216.
43		
80	B19/5TCAE00044	N-channel, field effect.(Junction Singe Gate);sim to SONY 2SK1577.
81	B19/5TCAB00288	Silicon, NPN; sim to NEC 2SC3356.
82	B19/5TKAK00015	Silicon, NPN; sim to PANASONIC XP1216TX.
301	B19/51KAK00015	Silicon, NPN; sim to PANASONIC XP12161X.
303		
		CRYSTAL
01	B19/5XNAA00831	Reference Oscillator unit: 12.8MHz 2PPM.

PARTS LIST

	S' RECE	YNTHESIZER BOARD IVER/EXCITER SECTION	SYMBOL	EGE PART NO.	DESCRIPTION
	CMN	-352A (Used in 344A4577P1)	C444A	B19/5CAAA03229	Ceramic: 5 pF 0.5 pF 50 VDCW, temp coef 060 PPM.
	CMN-	352B (Used in 344A4577P2)	C444B	B19/5CAAA04057	Ceramic: 0.5 pF ±0.25 pF 50 VDCW, temp coef 0250 PPM.
		DESCRIPTION	C445A	B19/5CAAA0±3003	Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0120 PPM (Used in A).
C151	EGE PART NO.	Ceramic: 1000 pE +10% 50 VDCW temp coef +15%	C445A	B19/5CAAA0±3000	Ceramic: 2 pF ± 0.25 pF 50 VDCW, temp coef 0250 PPM (Used in B).
thru	DT//JCAAAOJ4/1	$\frac{1}{1000} \text{ pr} \pm 1000 \text{ pr} \pm 1000 \text{ so vDew, temp cocr} \pm 1000 \text{ pr}$	C446	B19/5CAAA03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).
C153			C446	B19/5CAAA03408	Ceramic: 12 pF \pm 5% 50 VDCW, temp coef 060 PPM (Used in B).
C154	B19/5CAAA03411	Ceramic: 27 pF ±10% 50 VDCW, temp coef 060 PPM.	C447A	B19/5CBAB02858	Ceramic: 120 pF ±5% 50 VDCW, temp coef 060 PPM.
C156	B19/5CAAA03471	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.	C447B	B19/5CAAA03479	Ceramic: 180 pF \pm 5% 50 VDCW, temp coef 060 PPM (Used in A).
C159			C447B	B19/5CAAA03803	Ceramic: 68 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).
C161	B19/5CAAA03229	Ceramic: 5 pF ±0.25 pF 50 VDCW, temp coef 060 PPM.	C447C	B19/5CBAB02858	Ceramic: 120 pF ±5% 50 VDCW, temp coef 060 PPM.
C162	B19/5CAAA03471	Ceramic: 1000 pF ±10% 50 VDCW, temp coef ±15%.	C448	B19/5CAAA03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).
thru C164			C448	B19/5CAAA03408	Ceramic: 12 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).
C165	B19/5CAAA03921	Ceramic: 0.1 μF ±10% 25 VDCW, temp coef ±15%.	C449A	B19/5CAAA03919	Ceramic: 0.75 pF ± 0.25 pF 50 VDCW, temp coef 0120 PPM. (Used in B).
C166	R10/5C44402471	Coramic: 1000 pE ±10% 50 VDCW tomp coof ±15%	C449B	B19/5CAAA0±3003	Ceramic: 3 pF ± 0.25 pF 50 VDCW, temp coef 0120 PPM (Used in A).
C168	B19/5CAAA03471	Ceramic: $0.01 \text{ µE} \pm 10\% 25 \text{ VDCW}$, temp coef $\pm 15\%$.	C449B	B19/5CAAA0±3000	Ceramic: 2 pF \pm 0.25 pF 50 VDCW, temp coef 0120 PPM (Used in
C169	B19/5CSAD00403	Tantalum: $22mE + 20\%$ 16 VDCW	04504	D10/5044404057	B).
C/01	B19/5CAAD03/10	Ceramic: 22 nF +5% 50 VDCW, temp coef 060 PPM	C450A	B19/5CAAA04057	Ceramic: 0.5 pF ±0.25 pF 50 VDCW, temp coef 0120 PPM.
and	DINSCARDOSTIO		C450B	B19/5CAAA03229	Ceramic: 5 pF ± 0.25 pF 50 VDCW, temp coet 060 PPM.
C402			C451A	B19/5CAAA03446	Ceramic: 6 pF 0.5 pF 50 VDCW, temp coel 060 PPM (Used in A).
C403	B19/5CAAA03780	Ceramic: 150 pF ±5% 50 VDCW, temp coef 060 PPM.	C451A	B19/5CAAA03229	Ceramic: 5 pF \pm 0.25 pF 50 VDCW, temp coel 060 PPW (Used in B).
C404	B19/5CAAA03470	Ceramic: 0.01 μ F ±10% 25 VDCW, temp coef ±15%.	C454A	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C407			C454B	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C408	B19/5CAAA03471	Ceramic: 1000 pF \pm 10%. 50 VDCW, temp coef \pm 15%.	C454C	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
and			C455A	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C407	R10/5CAAA02470	Coramic: 0.01 μ E +10% 25 VDCW tomp coof +15%	C455B	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
and	DINSCAROSTIO	10.00 μ 10.00 μ 10.00 20 00 00 100 100 100	C455C	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C411			C456A	B19/5CBAB02829	Ceramic: 470 pF \pm 5% 50 VDCW, temp coef 060 PPM.
C412	B19/5CAAA03657	Ceramic: 18 pF ±5% 50 VDCW, temp coef 060 PPM.	C456B	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C413	B19/5CAAA03470	Ceramic: 0.01 μ F ±10% 25 VDCW, temp coef ±15%.	C456C	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C415			C457A	B19/5CBAB02829	Ceramic: 470 pF ±5% 50 VDCW, temp coef 060 PPM.
C416	B19/5CAAD00959	Ceramic: 0.01 μF ±10% 50 VDCW, temp coef ±15%.	C457B	B19/5CBAB02829	Ceramic: 470 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM.
C417	B19/5CAAA03470	Ceramic: 0.01 μF ±10% 25 VDCW, temp coef ±15%.	C457C	B19/5CBAB02829	Ceramic: 470 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM.
C431A	B19/5CAAA03698	Ceramic: 9 pF 0.5 pF 50 VDCW, temp coef 060 PPM (Used in A).	C461	B19/5CAAA03471	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
C431A	B19/5CAAA03285	Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 060 PPM (Used in B).	C463	B19/5CAAA03471	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
C432A	B19/5CAAD03410	Ceramic: 22 pF \pm 5% 50 VDCW, temp coef 060 PPM.	C464	B19/5CAAD00838	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef 0 \pm 15%.
C433A	B19/5CAAA03409	Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).	C465	B19/5CAAA03471	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.
C433A	B19/5CAAA03285	Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 060 PPM (Used in B).	C467	B19/5CAAA03411	Ceramic: 27 pF ±5% 50 VDCW, temp coef 060 PPM.
C434A	B19/5CAAAO3001	Ceramic: 4 pF ±0.25 pF 50 VDCW, temp coef 060 PPM (Used in	C468	B19/5CAAA03471	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coef \pm 15%.
04244	D10/504440-2000	A).	C469	B19/5CAAA03657	Ceramic: 18 pF ±5% 50 VDCW, temp coef 060 PPM.
C434A	B19/5CAAA0±3000	Ceramic: 2 pF ±0.25 pF 50 VDCW, temp coer 060 PPIVI. (Used in B).	C470		
C434B	B19/5CAAA03444	. rearanic: 0.5 pF ± 0.25 pF 50 VDCW, temp coef 0250 PPM. (Used in B).	C471 and	B19/5CAAA03471	Ceramic: 1000 pF $\pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
C435	B19/5CAAA03409	Ceramic: 15 pF ±5% 50 VDCW, temp coef 060 PPM.	C472		
C436	B19/5CAAD03410	Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).	C473	B19/5CAAA03411	Ceramic: 27 pF \pm 5% 50 VDCW, temp coef 060 PPM.
C436	B19/5CAAD03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).	C474	B19/5CAAA03471	Ceramic: 1000 pF \pm 10% 50 VDCW, temp coet \pm 15%.
C437	B19/5CAAA03657	Ceramic: 18 pF +±5% 50 VDCW, temp coef 060 PPM (Used in A).	C475 and	B19/5CAAA03409	Ceramic: 15 pF ±5% 50 VDCW, temp coer 060 PPM.
C437	B19/5CAAA03409	Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).	C476		
C438	B19/5CAAA03411	Ceramic: 27 pF \pm 5% 50 VDCW, temp coef 060 PPM.	C477	B19/5CAAA0±3001	Ceramic: 4 pF ±0.25 pF 50 VDCW, temp coef 060 PPM.
C439	B19/5CAAA03410	Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).	C480	B19/5CAAA03921	Ceramic: 0.1 μF ±10% 25 VDCW, temp coef ±15%.
C439	B19/5CAAA03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).	C482	B19/5CAAA03921	Ceramic: 0.1 μF ±10% 25 VDCW, temp coef ±15%.
C440	B19/5CAAA03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).	C483	B19/5CAAA03470	Ceramic: 0.01 $\mu F \pm 10\%$ 50 VDCW, temp coef $\pm 15\%.$
C440	B19/5CAAA03409	Ceramic: 15 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).	and C484		
C441	B19/5CAAA03410	Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).	C485	B19/5CAAD00959	Ceramic: 0.01 μ F ±10% 50 VDCW, temp coef ±15%.
C441	B19/5CAAA03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).	C486	B19/5CAAA03470	Ceramic: 0.01 μ F ±10% 50 VDCW, temp coef ±15%.
C442	B19/5CAAA03410	Ceramic: 22 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in A).	C488A	B19/5CAAA03409	Ceramic: 15 pF ±5% 50 VDCW, temp coef 060 PPM (Used in A).
C442	B19/5CAAA03657	Ceramic: 18 pF $\pm 5\%$ 50 VDCW, temp coef 060 PPM (Used in B).	C488A	B19/5CAAA03408	Ceramic: 12 pF ±5% 50 VDCW, temp coef 060 PPM (Used in B).
C443A	B19/5CAAA03446	Ceramic: 6 pF 0.5 pF 50 VDCW, temp coef 060 PPM (Used in A).	C488B	B19/5CAAA0±3004	Ceramic: 1 pF ±0.25 pF 50 VDCW, temp coef 060 PPM (Used in
C443A	B19/5CAAA03229	Ceramic: 5 pF ± 0.25 pF 50 VDCW, temp coef 060 PPM (Used in B).	C489A	B19/5CAAA03409	B). Ceramic: 15 pF ±5% 50 VDCW, temp coef 060 PPM (Used in A)
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SYMBOL	EGE PART NO.	DESCRIPTION	SYMBO
C489A	B19/5CAAA03408	Ceramic: 12 pF ±5% 50 VDCW, temp coef 060 PPM (Used in B).	L434
C489B	B19/5CAAA0±3004	Ceramic: 1 pF ± 0.25 pF 50 VDCW, temp coef 0250 PPM (Used in	L435
		B).	L435
C490	B19/5CAAA03285	Ceramic: 10 pF 0.5 pF 50 VDCW, temp coef 060 PPM.(Used in A).	L436
C490	B19/5CAAA03448	Ceramic: 8 pF 0.5 pF 50 VDCW, temp coer 060 PPM.(Used in B).	L437
C491	B19/5CAAA03470	Ceramic: 0.01 μ F ±20% 10 VDCW.	L461
and	517/30/01/03470		L462
C493			thru 1465
C494	B19/5CAAA0±3003	Ceramic: 3 pF ±0.25 pF 50 VDCW, temp coet 0120 PPM.	L466
C495	B19/5CSAD00403	Iantaium: 22 μ F ±20% 16 VDCW.	
0490	B19/5CAAA03471	Ceramic: 1000 pF \pm 10% 50 VDCW temp coel 15 %.	
		DIODES	R151
CD151	B19/5TXAD00713	Silicon: fast recovery sim to TOSHIBA ISS352.	R152
CD152	B19/5TXAD00290	Silicon: fast recovery (2 diodes in cathode); sim to TOSHIBA	R153
		ISS184.	R154
CD401 and	B19/5TXAR00086	Silicon: (Schottky Barrier); sim to MITSUBISHI MI809.	R155
CD403			R156
CD431	B19/5TXAE00836	Silicon: Epitaxia Planar Diode; sim to HITACHI HSU277.	R157
thru CD434			R 158 D150
			R157
		CAPACITORS	thru
CV431	B19/5CVAC00145	Variable: 6 pF max.	R162
and CV432			R163
			R164
		FILTER	R403
FL481	B19/5NXAA00102	EMI Filter: 1000 pF.	R404
			R405
	D40/5574700000	HYBRID CIRCUIT	R405
HC441	B19/5EZA100003	Double Balanced Mixer.	R408
		INTEGRATED CIRCUITS	R409
IC151	B19/5DDAC00946	RF wide-band ampifier:sim to NEC UPC1678G.	and
IC152	B19/5DAAN00644	Linear: Positive Voltage Regulator; sim to JRC NJM78L06UA.	R410
IC481	B19/5DAAA00428	Linear: Positive Voltage Regulator; sim to NEC UPC2409HF.	R411
			R412
		JACKS	R413
J151	B19/5JAAA01686	Connector: RF.	R415
J401	B19/5JAAA01686	Connector: RF.	R417
J501	B19/5JBAX00018	Connector: 30 pins.	R418
		COIL S	R419
L152	B19/5LCAP00234	Coil: RF 0.22 uH ±10%.	and P420
L153	B19/5LCAP00240	Coil: RF 33 µH ±10%.	R420
L154	B19/5LCAP00234	Coil: RF 0.22 μH ±10%.	R421
and			R431
L 100	B10/5I CAP00252	Coil: PE 19 uH +10%	thru
1157	B19/5LCAP00232	Coll: $PE = 1.0 \text{ mH} + 20\%$	R434
1 401	B19/6LALD19286		R435
L402	B19/5LCAP00233	Coil: RF 0.15 μ H ±10% (Used in A).	R430
L402	B19/5LCAP00299	Coil: RF 0.1 μ H ±10% (Used in B).	thru
L403	B19/5LCAP00148	Coil: RF 0.82 μ H ±20%.	R447
and			R448
L404	B19/51 CAD00259	Coll: RE 68 uH +10%	R449
1 406	B19/51 CAP00230	Coil: RE 47 μ H +10% (Used in Δ)	R450
L406	B19/5I CAP00241	Coil: RF 39 μ H ±10% (Used in B).	thru R452
L431	B19/6I AI D19206	Coil: RF (Used in A).	R453
L431	B19/6LALD19205	Coil: RF (Used in B).	and
L432	B19/6LALD19185	Coil: RF (Used in A).	R454
	R10/6LALD10204	Coil: RF (Used in B).	R461
L432	D17/0LALD17204		D/67
L432 L433	B19/6LALD19254	Coil: RF (Used in A).	and

SYMBOL	EGE PART NO.	DESCRIPTION
L434	B19/6LALD19255	Coil: RF
L435	B19/6LALD19185	Coil: RF (Used in A).
L435	B19/6LALD19204	Coil: RF (Used in B).
L436	B19/6LALD19206	Coil: RF
and L437		
L461	B19/5LCAP00299	Coil: 0.1 µH ±10%.
L462	B19/5LCAP00240	Coil: RF 33 µH ±10%.
thru		
1466	B19/5I CAT00012	Coil: RE 10 uH +20%
2400	DT//SEG/(100012	
		RESISTORS
R151	B19/5RDAC02893	Metal film: 10 ohms ±5% 100 VDCW.1/16W.
R152	B19/5RDAC02832	Metal film: 220 ohms ±5% 100 VDCW.1/16W.
R153	B19/5RDAC02822	Metal film: 1.5K ohms ±5% 100 VDCW.1/16W.
R154	B19/5REAG04074	Metal film: 4.7 onms ±5% 200 VDCW.1/2W.
R 155 D164	B19/5RDAC02827	Metal film: 330 ohms ±5% 100 VDCW.1/16W.
R 100 D157	B19/5RDAC02409	Metal film: 2.2V ohms ±5% 100 VDCW. 1/16W
R 107 D159	B19/5RDAC02821	Metal film 1k obms +5% 100 VDCW 1/10W
R150	B19/5RDAC02440	Metal film: 15 ohms +5% 100 VDCW 1/16W
R160	B19/5RDAC02827	Metal film: 330 ohms ±5% 100 VDCW 1/16W
thru R162	D1//3RDA602027	
R163	B19/5RDAC02895	Metal film: 15 ohms ±5% 100 VDCW.1/6W.
R164	B19/5RDAC02827	Metal film: 330 ohms ±5% 100 VDCW.1/16W.
R403	B19/5RDAC02836	Metal film: 1.8K ohms ±5% 100 VDCW.1/16W.
R404	B19/5RDAC02839	Metal film: 6.8K ohms ±5% 100 VDCW.1/16W.
R405	B19/5RDAC02898	Metal film: 27 ohms $\pm 5\%$ 100 VDCW.1/16W (Used in A).
R405	B19/5RDAC02900	Metal film: 39 ohms $\pm 5\%$ 100 VDCW.1/16W (Used in B).
R406	B19/5RDAC02898	Metal film: 27 ohms ±5% 100 VDCW.1/16W.
R408	B19/5RDAC02825	Metal film: 2.2K ohms ±5% 100 VDCW.1/16W.
R409 and R410	B19/5RDAC02901	Metal film: 47 ohms ±5% 100 VDCW.1/16W.
R411	B19/5RDAC02832	Metal film: 220 ohms ±5% 100 VDCW.1/16W.
R412	B19/5RDAC02834	Metal film: 470 ohms ±5% 100 VDCW.1/16W.
R413	B19/5RDAC02894	Metal film: 12 ohms ±5% 100 VDCW.1/16W.
R414	B19/5RDAC02834	Metal film: 470 ohms ±5% 100 VDCW.1/16W.
R415	B19/5RDAC02807	Metal film: 10K ohms ±5% 100 VDCW.1/16W.
R417	B19/5RDAC02825	Metal film: 2.2K ohms $\pm 5\%$ 100 VDCW.1/16W .
R418	B19/5RDAC02803	Metal film: 100K ohms $\pm 5\%$ 100 VDCW.1/16W.
R419 and R420	B19/5RDAC02807	Metal film: 10K ohms ±5% 100 VDCW.1/16W.
R421	B19/5RDAC02803	Metal film: 100K ohms ±5% 100 VDCW.1/16W.
R422	B19/5RDAC02807	Metal film: 10K ohms ±5% 100 VDCW.1/16W.
R431	B19/5RDAC02807	Metal film: 10K ohms ±5% 100 VDCW.1/16W.
thru R434		
R435	B19/5RZAB01429	Metal film: 0 ohms .
R438	B19/5RZAB01429	Metal film: 0 ohms .
R445 thru R447	B19/5RDAC02803	Metal film: 100K ohms $\pm 5\%$ 100 VDCW.1/16W.
R448 and R449	B19/5RDAC02807	Metal film: 10K ohms ±5% 100 VDCW.1/16W.
R450 thru R452	B19/5RDAC02803	Metal film: 100K ohms ±5% 100 VDCW.1/16W.
R453 and R454	B19/5RDAC02807	Metal film: 10K ohms ±5% 100 VDCW.1/16W.
R461	B19/5RDAC02816	Metal film: 5.6K ohms ±5% 100 VDCW.1/16W.
R462	B19/5RDAC02819	Metal film: 1K ohms ±5% 100 VDCW.1/16W.
and R463		

PARTS LIST

SYMBOL	EGE PART NO.	DESCRIPTION
R464	B19/5RDAC02893	Metal film: 10 ohms ±5% 100 VDCW.1/16W.
R465	B19/5RDAC02897	Metal film: 22 ohms ±5% 100 VDCW.1/10W.
R466	B19/5RDAC02816	Metal film: 5.6K ohms ±5% 100 VDCW.1/16W.
R467	B19/5RDAC02819	Metal film: 1K ohms ±5% 100 VDCW.1/16W.
and R468		
R469	B19/5RDAC02897	Metal film: 22 ohms +5% 100 VDCW, 1/10W,
R470	B19/5RDAC02893	Metal film: 10 ohms +5% 100 VDCW. 1/16W.
R471	B19/5RDAC02827	Metal film: 330 ohms +5% 100 VDCW.1/16W.
and R472	Dimotorio	
R473	B19/5RDAC02895	Metal film: 15 ohms ±5% 100 VDCW.1/16W.
R474	B19/5RDAC02827	Metal film: 330 ohms ±5% 100 VDCW.1/16W.
and R475		
R476	B19/5RDAC02895	Metal film: 15 ohms ±5% 100 VDCW. 1/16W.
R477	B19/5RDAC02827	Metal film: 330 ohms ±5% 100 VDCW.1/16W.
R478	B19/5RDAC02464	Metal film: 15 ohms ±5% 100 VDCW. 1/10W.
R479	B19/5RDAC02827	Metal film: 330 ohms +5% 100 VDCW.1/16W.
P480	R19/5RDAC02825	Metal film: 2.2K ohms +5% 100 VDCW.1/16W (Used in A).
R400	P10/5PDAC02838	Motol film: 4.7K ohms +5% 100 VDCW. 1/16W (Used in R).
K40U	B19/3KDM002030	
70151	D10/ET74D00010	I KANSIS I UKS
TR151	B19/51ZAKUUU19	
TR152	B19/51BAB00100	Silicon, NPN; sim to NEC 258624.
TR401	B19/5TCAB01463	Silicon, NPN; sim to NEC 2SC3357.
TR402	B19/5TDAB00098	Silicon, NPN; sim to NEC 2SD596.
TR403	B19/5TZAT00118	Silicon, NPN; sim to PANASONIC XN6401.
TR431 and TR432	B19/5TZAT00118	Silicon, NPN; sim to PANASONIC XN6401.
TR461	B19/5TCAB01463	Silicon, NPN; sim to NEC 2SC3357.
and	I !	1
		1

Δ COMPONENT IDENTIFICATION CHART

SYMBOL	A 136~153MHz	B 150~174MHz
C241	18pF (UJ)	22pF (UJ)
C260	4pF	брF
C266	6pF	7pF
C267	4pF	8pF
C272	6pF	8pF
C273	7pF	12pF
C282	4pF	5pF
C288	82pF	68pF
C289	0	7pF
C293	27pF	18pF
C2104	12pF	8pF
C2105	12pF	10pF
C2106	3pF	0
C2107	3pF	0
C2111	15pF	12pF
C2113	3pF	0
C2114	3pF	0
C2118	27pF	18pF
C2120	3pF	0
C2121	3pF	0
L242	H-6LALD00171	H-6LALD00173
L248	0.82µH	0.68µH
L249	0.82µH	0.68µH
L250	0.82µH	0.68µH
L251	0.82µH	0.68µH
L252	0.82µH	0.68µH
L282	H-6LALD00170	H-6LALD00172
L287	1.0µH	0.68µH
L289	1.0µH	0.68µH
L291	1.0µH	0.68µH
R229	68kΩ	82kΩ
R230	3.9kΩ	15kΩ
R246	220Ω	180Ω
R247	22Ω	33Ω
R248	220Ω	180Ω
R2002	390kΩ	560k Ω
R2003	270kΩ	180kΩ
R2004	120kΩ	$82k\Omega$
R2005	18kΩ	$47 \mathrm{k}\Omega$

Δ COMPONENT IDENTIFICATION CHART

PARTS NO.	CMN-352A-1 136-153MHz	CMN-352B-1 150-174MHz
C431A	9PF	10PF
C431B	0PF	0PF
C432A	22PF	22PF
C432B	0PF	0PF
C433A	15PF	10PF
C433B	0PF	4PF
C434A	4PF	2PF
C434B	0PF	0.5PF
C435	15PF	15PF
C436	22PF	18PF
C437	18PF	15PF
C438	27PF	27PF
C439	22PF	18PF
C440	18PF	15PF
C441	22PF	16PF
C442	22PF	18PF
C443A	6PF	5PF
C443B	0PF	0PF
C444A	5PF	5PF
C444B	0.5PF	0.5PF
C445A	3PF	2PF
C445B	0PF	0.75PF
C446	18PF	12PF
C447A	120PF	120PF
C447B	180PF	68PF
C447C	120PF	120PF
C448	18PF	12PF
C449A	0PF	0.75PF
C449B	3PF	2PF
C450A	0.5PF	0.5PF
C450B	5PF	5PF
C451A	6PF	5PF
C451B	0PF	0PF
C488A	15PF	12PF
C488B	0PF	1PF
C489A	15PF	12PF
C489B	0PF	1PF
C490	10PF	8PF
L402	150nF	100nF
L406	47nF	39nF
L431	2.0 ø6T	2.0 ø5T
L432	1.8 ø5T	2.0 ø4T
L433	2.5 ø4T	2.0 ø5T
L434	2.5 ø5T	2.0 ø5T
L435	1.8 ø5T	2.0 ø4T
R405	27Ω	39Ω
R406	27Ω	27Ω
R480	2.2KΩ	4.7KΩ

SYNTHESIZER

RECEIVER/EXCITER

OUTLINE DIAGRAM





SOLDER SIDE

COMPONENT SIDE

SOLDER SIDE



SYNTHESIZER

RECEIVER/EXCITER

2**11 1**2

FL204



SCHEMATIC DIAGRAM



* IDENTIFIES CHIP COMPONENTS (EXAMPLE #R234) WHICH ARE LOCATED ON SOLDER SIDE OF PWB ALL RESISTORS ARE 1/16 WATT UNLESS OTHERWISE SPECIFIED RESISTOR VALUES IN Q.UNLESS FOLLOWED BY MULTIPLIER K OR M CAPACITOR VALUES IN F. UNLESS FOLLOWED BY MULTIPLIER p OR u INDUCTANCE VALUES IN F. UNLESS FOLLOWED BY MULTIPLIER p OR μ INDUCTANCE VALUES IN F. UNLESS FOLLOWED BY MULTIPLIER p OR μ

DC VOLTAGE READINGS ALL VOLTAGES ARE TYPICAL. VOLTAGES ARE MEASURED WITH A 10Meg OHM PER VOLT METER, REFERENCE TO GROUND VOLTAGE READINGS ARE TAKEN WITH THE TRANSMITTER UNKEYEDKEYED EX. 45 (UNKEYED) / .65(KEYED)

SYNTHESIZER





NOTE:

ALL RESISTORS ARE 1/16 WATT UNLESS OTHERWISE SPECIFIED RESISTOR VALUES IN QUINLESS FOLLOWED BY MULTIPLIER K OR M CAPACITOR VALUES IN F UNLESS FOLLOWED BY MULTIPLIER p OR u INDUCTANCE VALUES IN H UNLESS FOLLOWED BY MULTIPLIER IN OR JU LBI-38910

RECEIVER/EXCITER