

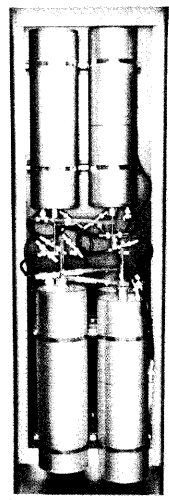
**SPURIOUS SUPPRESSION FAMILY**

**D** BASE STATION DUPLEXERS

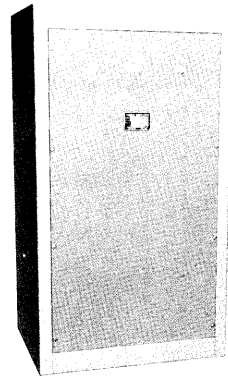
# Q - CIRCUIT

PATENT NO. 3717827

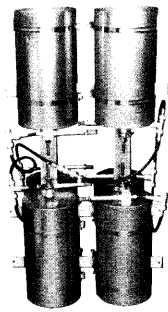
**Q-201G**  
**Q-207G**  
66 $\frac{3}{8}$ " x 22" x 18"



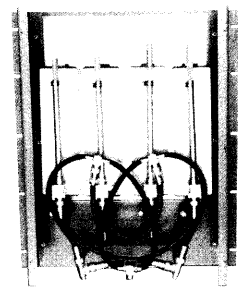
**Q-202G**  
**Q-208G**  
**Q-301G**  
**Q-302G**  
40 $\frac{3}{8}$ " x 22" x 17 $\frac{1}{8}$ "



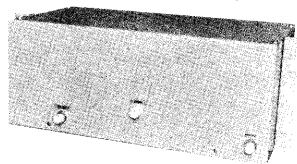
**Q-321G**  
35" x 19" x  $\pm 7\frac{1}{2}$ "



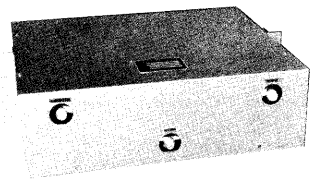
**Q-203D**  
22 $\frac{3}{4}$ " x 19" x 5 $\frac{1}{4}$ "



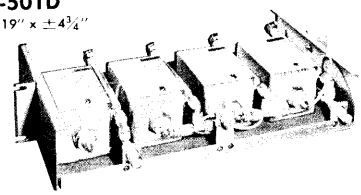
**Q-502D**  
7" x 19" x  $\pm 4\frac{3}{8}$ "



**Q-322D**  
5 $\frac{1}{4}$ " x 19" x  $\pm 4\frac{1}{2}$ " - 9 $\frac{1}{2}$ "



**Q-501D**  
3 $\frac{1}{2}$ " x 19" x  $\pm 4\frac{3}{4}$ "



The Sinclair **SPURIOUS SUPPRESSION FAMILY** of duplexers has evolved due to growing industry demand for increased protection against spurious noise level problems, inherent in solid state transmitters, and was made possible through Sinclair's **PATENTED Q-CIRCUIT DESIGN**—an advance in the state of the duplexer art. Typical models are shown above, the detailed specifications to be found on page 2.

## SUPERIOR COMMUNICATIONS EQUIPMENT THROUGH ADVANCED RESEARCH

P. O. BOX 23 • TONAWANDA, NEW YORK 14150 • CABLE ADDRESS (FOREIGN ONLY) UNIONTEX, N. Y.

PHONE: AREA CODE 716 • 874-3682

122 RAYETTE ROAD • MAPLE, ONTARIO, CANADA • PHONE: AREA CODE 416 • 669-1244

Sinclair's patented Q-circuit filters are responsible for this family of Spurious Suppression duplexers. Maintaining the highest circuit "Q" allows tuning to the closest spaced duplex frequencies, while the band pass type characteristics provide high suppression of spurious and side band transmitter noise between, and adjacent to, the duplex frequencies. The desirable minimum isolation versus frequency performance is indicated on our brochure curves by the short dashed line. • The Q-circuit duplexers are also well suited for multiple Tx and Rx frequency operation. Application of the Q-circuit to a number of cavity sizes, in conjunction with insertion loss trade-offs, provides a means of controlling pass band and notch width to meet a variety of system requirements. The Q-203D and Q-322D are examples of duplexers suited for multiple frequency operation. • The Q-323G and Q-324G are special purpose models for 2 MHz or more frequency separation, and provide excellent band pass selectivity around the duplex frequencies, particularly advantageous in highly congested frequency environments. • The Q-318G and associated models provide an extra measure of isolation when required. • The Q-202G is a preferable alternative for the F-201G hybrid ring duplexer when 80 db isolation is sufficient, the Q-202G having better temperature stability and possessing a higher degree of minimum isolation between duplex frequencies. • Some models which are commonly used for 5 MHz spacing have a second line of specifications for that spacing. • Specify Tx and Rx frequencies when ordering.

DUPLEXER SPECIFICATIONS	ELECTRICAL								MECHANICAL					
	MODEL NO.	FREQUENCY RANGE IN MHz	MINIMUM FREQUENCY SPACING		POWER RATING IN WATTS		INSERTION LOSS IN DB		ATTENUATION IN DB AT	MINIMUM ATTENUATION BETWEEN DUP FREQS IN DB		DIMENSIONS		
			Tx Rx		Tx Rx		Tx FREQ Rx FREQ			ENCLOSURE OR MOUNT		H"	W"	D"
			Tx	Rx	Tx	Rx	Tx	Rx		Tx	Rx			
Q-201G	148-174	0.3	250	2.2	2.2	95	95	50	C	66.4	22.0	18.0		
Q-207G	"	0.3	475	2.2	2.2	95	95	50	C	66.4	22.0	18.0		
Q-202G	"	0.5	250	1.5	1.5	80	80	50	C	40.4	22.0	17.2		
Q-218G	"	0.5	250	1.5	1.5	80	80	50	R	33.0	19.0	± 7.5		
Q-208G	"	0.5	475	1.5	1.5	80	80	50	C	40.4	22.0	17.2		
Q-203D	"	3.0	400	0.6	0.6	65	65	20	R	22.8	19.0	5.3		
Q-301G	450-470	0.7	150	2.2	2.2	100	100	50	C	40.4	22.0	17.2		
Q-321G	"	0.7	150	2.2	2.2	100	100	50	R	35.0	19.0	± 7.5		
Q-302G	"	0.7	330	2.2	2.2	100	100	50	C	40.4	22.0	17.2		
Q-318G	"	2.0	150	1.5	1.5	90	90	50	R	18.0	19.0	± 7.5		
Q-319G	"	2.0	150	1.5	1.5	90	90	50	C	22.0	21.0	18.0		
Q-320G	"	2.0	330	1.5	1.5	90	90	50	C	22.0	21.0	18.0		
Q-323G	"	2.0	150	1.0	1.0	80	80	50	C	22.0	21.0	18.0		
Q-324G	"	2.0	330	1.0	1.0	80	80	50	C	22.0	21.0	18.0		
Q-322D	"	3.0	330	0.8	0.8	70	70	15	R	5.3	19.0	+4.5-9.5		
(Above Model)	"	5.0	330	0.8	0.8	80	80	30	R	5.3	19.0	+4.5-9.5		
Q-501D	890-960	3.6	125	1.3	1.3	70	70	30	R	3.5	19.0	± 4.8		
Q-502D	"	3.6	125	1.5	1.5	95	95	40	R	7.0	19.0	± 4.8		

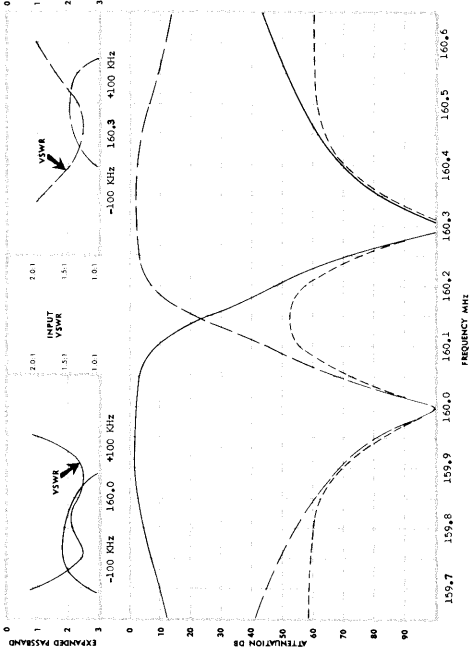
LIMITED STOCK MODELS: CONSULT FACTORY FOR DELIVERY. EQUIVALENT MODELS FOR ABOVE DUPLEXERS IN OTHER FREQUENCY RANGES (MHz). MODELS ON SAME LINE WITHIN RANGE BLOCK SHARE ALL OTHER DATA.					
FROM ABOVE	132-148	FROM ABOVE	406-420	FROM ABOVE	470-512
Q-201G	Q-2B03G	Q-301G	Q-3A01G	Q-301G	Q-401G
Q-207G	Q-2B04G	Q-302G	Q-3A02G	Q-302G	Q-402G
Q-202G	Q-2B01G	Q-318G	Q-3A14G	Q-318G	Q-403G
Q-208G	Q-2B02G	Q-319G	Q-3A15G	Q-319G	Q-404G
Q-218G	Q-2B17G	Q-320G	Q-3A16G	Q-320G	Q-405G
Q-203D	Q-2B05D	Q-321G	Q-3A17G	Q-321G	Q-406G
		Q-322D	Q-3A18D	Q-323G	Q-407G
		Q-323G	Q-3A19G	Q-324G	Q-408G
		Q-324G	Q-3A20G		

OTHER SPECIFICATIONS — ELECTRICAL	OTHER SPECIFICATIONS — MECHANICAL
VSWR: 1.5 to 1 or less; Impedance: 50 ohms; Temp. Range: Q, R, P: -40°C to +80°C; F: -12°C to +65°C; MR: -40°C to +60°C; Insertion loss and Isolation values are for minimum frequency separations shown. Typically, isolations on Q, P, and F series increase and insertion losses of R and MR series decrease with greater frequency separations.	Connectors: Base N type; Mobile/Base UHF type unless otherwise specified. C—Cabinet; R—Rack; I—Integral Enclosure; ±D—Distance either side of mounting flange.

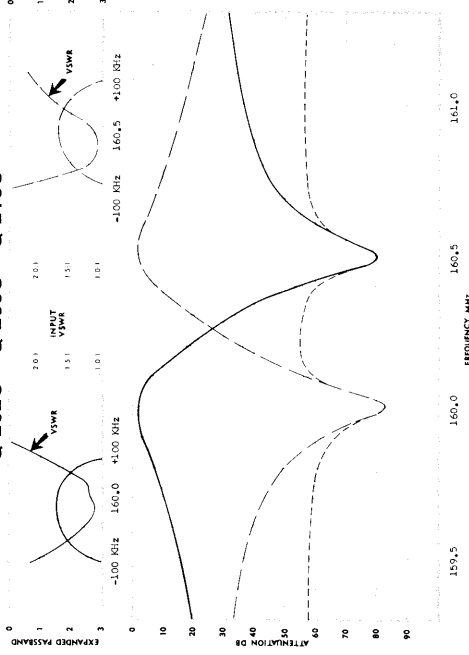
PREFIX FAMILIES	AFTER HYPHEN: FIRST DIGIT, OR DIGIT + LETTER STANDARD	OTHER RANGES	CENTER DIGIT PAIR	TRAILING LETTERS CAVITY DIAMETER
Q = Spurious Suppression F = Hybrid Ring P = Band Pass R = Band Reject M = Mobile/Base	1 = 30-50 MHz 2 = 148-174 " 3 = 450-470 " 4 = 470-512 " 5 = 890-960 "	1A = 25-30 MHz 1C = 66-88 " 1D = 88-108 " 2A = 108-136 " 2B = 132-150 " 2C = 132-174 " 2D = 215-260 " 2E = 225-300 "	2F = 300-400 MHz 2G = 225-400 " 3A = 406-420 " 3B = 406-512 " 3C = 450-512 " 4A = 470-490 " 4B = 490-512 "	A = 0— H = 7.0 B = 1— I = 8.0 C = 2.0 J = 9.0 D = 3.0 K = 10.0 E = 4.0 L = 11.0 F = 5.0 M = 12.0 G = 6.0

1. Power rating equals the sum of the power of each channel, except in the Q-Series Duplexers where rating applies to each channel simultaneously. In general, Power ratings can be increased with shortened duty cycles, consult factory.  
2. Attenuation measured with 50 ohm load on the antenna terminal.  
3. C/F: Consult factory for Duplexer mounting options other than listed.

Q-201G Q-207G



Q-202G Q-208G Q-218G



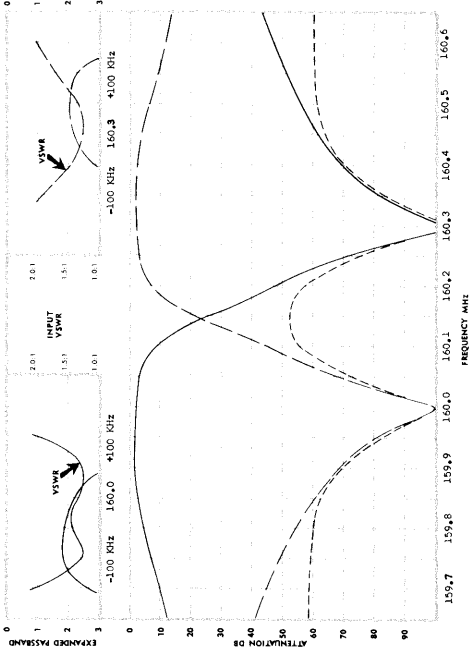
**CURVE KEY**

**SOLID LINE**: LOW PASS TO ANTENNA

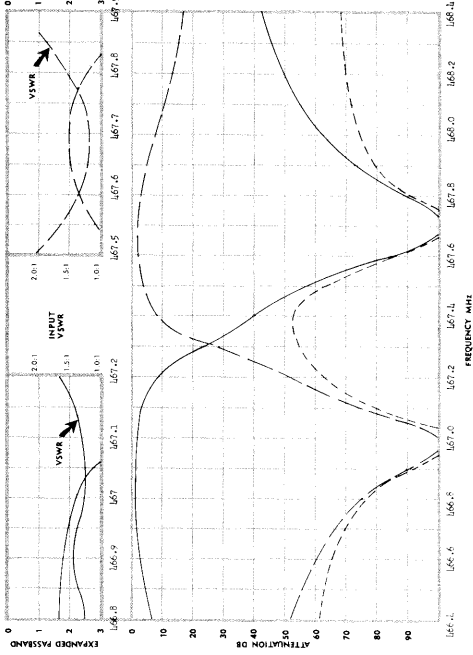
**DASHED LINE**: HIGH PASS TO ANTENNA

**SOLID LINE**: LOW PASS TO HIGHPASS, ANTENNA TERMINATED

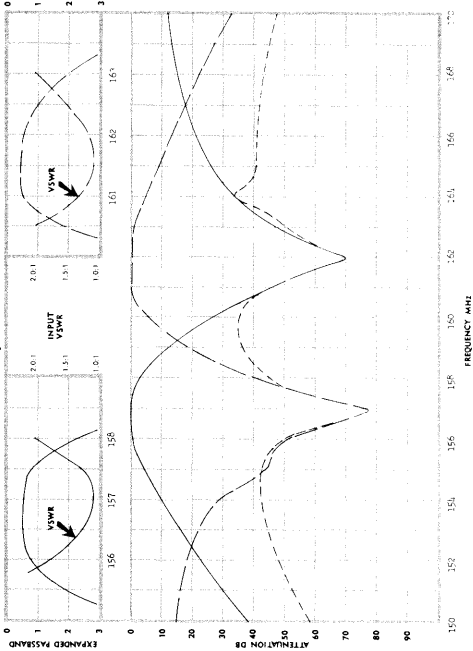
Q-201G Q-203D



Q-301G Q-302G Q-321G



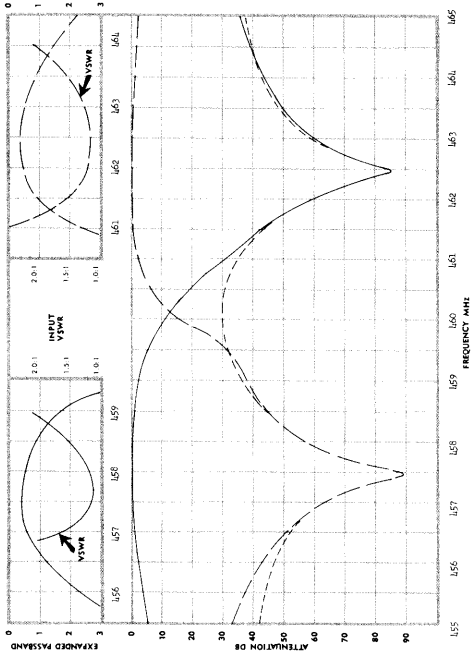
Q-203D



# SEVERECS FILTERS

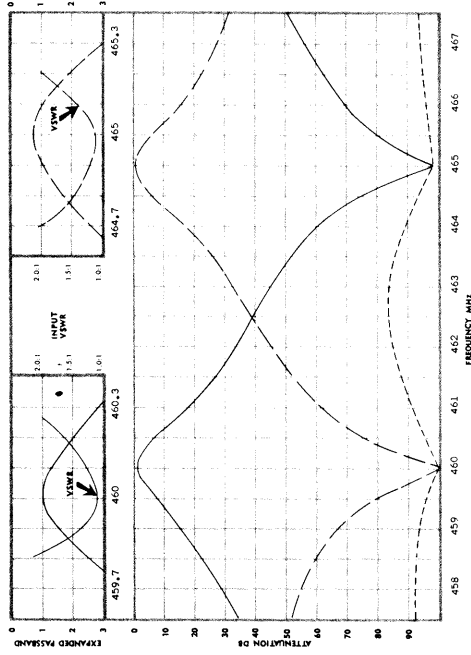
- Q-201G
- Q-207G
- Q-202G
- Q-208G
- Q-218G
- Q-203D
- Q-301G
- Q-302G
- Q-321G

Q-322D

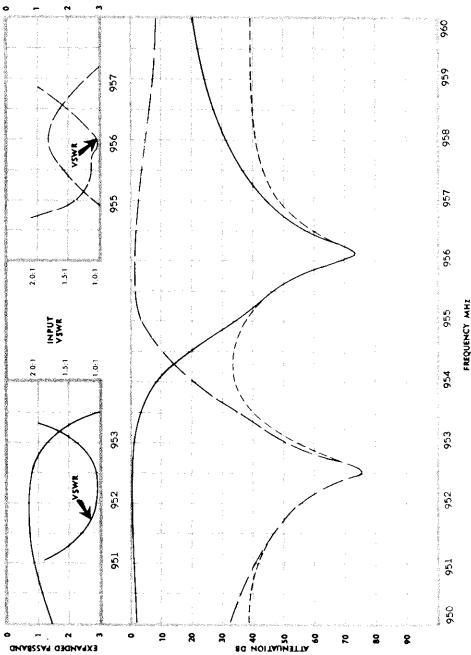


**CURVE KEY**  
 : LOW PASS TO ANTENNA  
 : HIGH PASS TO ANTENNA  
 : LOW PASS TO HIGHPASS, ANTENNA TERMINATED

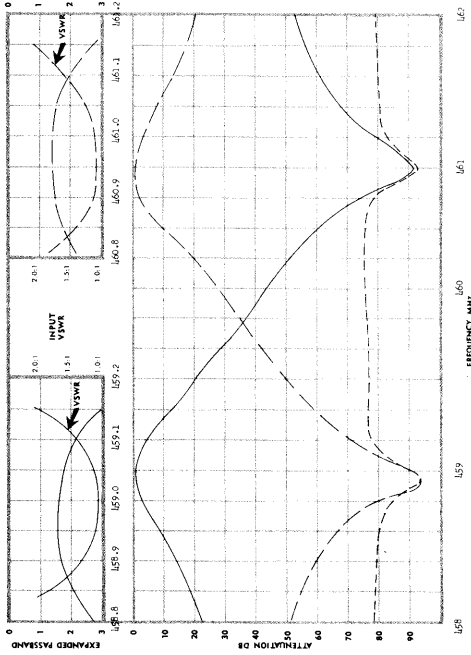
Q-323G Q-324G



Q-501D



Q-318G Q-319G Q-320G



- Q-323G
- Q-324G
- Q-322D
- Q-318G
- Q-319G
- Q-320G
- Q-501D

RESERVOIR