Q Series

TRADITIONAL Pb

RoHS COMPLIANT

Elliptical Function

Frequency Range from 1 kHz to 20 MHz

Application-Specific Designs

SERIES NUMBER	NUMBER OF POLE PAIRS (ELEMENTS)	INSERTION LOSS at f_o dB TYPICAL	BANDWIDTH SELECTION -3dBc % f_o	STOPBAND ATTENUATION dBc MINIMUM	STOPBAND FREQUENCY 1	STOPBAND FREQUENCY 2
CENTER FREQUENCY – 1 kHz to 20 MHz – specify any f_o within that range						
Q34(previously Q40)	4 (8)	2.3 to 1.6	10 to 15	-40	0.74 x f_o	1.34 x f_o
		1.6 to 1.2	> 15 to 20	-40	0.67 x f_o	1.47 x f_o
		1.2 to 0.9	> 20 to 25	-40	0.62 x f_o	1.58 x f_o
		0.9 to 0.8	> 25 to 30	-40	0.56 x f_o	1.74 x f_o
		0.8 to 0.7	> 30 to 35	-40	0.52 x f_o	1.86 x f_o
		0.7 to 0.6	> 35 to 40	-40	0.48 x f_o	2.00 x f_o
		0.6 to 0.5	> 40 to 45	-40	0.44 x f_o	2.15 x f_o
		0.5 to 0.5	> 45 to 50	-40	0.40 x f_o	2.34 x f_o
		0.5 to 0.4	> 50 to 55	-40	0.38 x f_o	2.45 x f_o
		0.4 to 0.4	> 55 to 60	-40	0.35 x f_o	2.60 x f_o
		0.4 to 0.4	> 60 to 65	-40	0.32 x f_o	2.80 x f_o
		0.4 to 0.3	> 65 to 70	-40	0.30 x f_o	2.93 x f_o
Q56 (previously Q70)	8 (16)	3.5 to 2.5	10 to 15	-60	0.77 x f_o	1.27 x f_o
		2.5 to 1.9	> 15 to 20	-60	0.72 x f_o	1.37 x f_o
		1.9 to 1.6	> 20 to 25	-60	0.67 x f_o	1.45 x f_o
		1.6 to 1.3	> 25 to 30	-60	0.62 x f_o	1.55 x f_o
		1.3 to 1.1	> 30 to 35	-60	0.58 x f_o	1.66 x f_o
		1.1 to 1.0	> 35 to 40	-60	0.53 x f_o	1.76 x f_o
		1.0 to 0.9	> 40 to 45	-60	0.50 x f_o	1.85 x f_o
		0.9 to 0.8	> 45 to 50	-60	0.46 x f_o	1.98 x f_o
		0.8 to 0.7	> 50 to 55	-60	0.43 x f_o	2.10 x f_o
		0.7 to 0.7	> 55 to 60	-60	0.40 x f_o	2.10 x f_o
		0.7 to 0.6	> 60 to 65	-60	0.37 x f_o	2.30 x f_o
		0.6 to 0.6	> 65 to 70	-60	0.35 x f_o	2.40 x f_o

Note: TTE's products are made in the USA. Application-specific designs are made to order. Typical delivery is 2 weeks. Expedited lead time of 3-5 days is available on many products.

For RoHS compliant, add "R" to part number. Example: Q56R-15M-2.25M-50-720A

TTE designates a component RoHS-compliant by adding "R" (RoHS) within the part number.

These RoHS components meet the ≤ 0.1% lead requirement and they are compatible with 260°C soldering processes.

NOTES:

- Operating Temperature Range: 0°C to +70°C
- Number of Pole Pairs (Elements): 4(8) or 8(16)
- Passband VSWR: 1.5:1 Typical
- Input Power: 20 mW
- Case Type: Refer to **Case Selection Guide**
- Case Options: PCB, BNC or SMA
- Normalized Response: Refer to **Graphs**
- Product Info: Refer to **Q Series**

TERMINATIONS:

50 Ω or 75 Ω	300 kHz - 20 MHz
1 kΩ - 50 Ω	10 kHz - 300 kHz
10 kΩ - 1 kΩ	500 Hz - 10 kHz

STOPBAND FREQUENCY CALCULATIONS:

Using part number Q56-15M-2.25M-50-720A, we know that the filter is an 8 pole Elliptical Function bandpass filter. Scroll down to series number Q56. Moving to the right we select the 15% bandwidth range. Moving to the right again we find the stopband specification listed as -60dBc minimum at 0.77 x f_o and at 1.27 x f_o. Thus, the -60dBc frequencies are at 11.55 MHz (0.77 x 15 MHz) and at 19.05 MHz (1.27 x 15 MHz), respectively.

PART NUMBER DERIVATION:

Q56	*(T)	**(R)	-15M	-2.25M	-50	-720A
1	2	3	4	5	6	7

1) Series, Q56 (which has 8 pole pairs)

*2) The "T" option specifies a filter with low THD for ADC/DAC testing. When selected therein,THD is > -80dBc, -96dBc typical.

**3) "R" RoHS compliant. Allow for longer lead-time.

4) The Center Frequency, f_o

5) The -3dBc passband bandwidth. It may also be specified as a percentage of f_o.Thus, instead of 2.25 MHz, use 15P.

6) Terminations

7) Case selection from the case selection guide. "T" option cases are larger than standard.

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