

## KG Series



### Gaussian

Frequency Range from 500 Hz to 200 MHz

Application-Specific Designs

SERIES NUMBER	NUMBER OF POLE PAIRS (ELEMENTS)	INSERTION LOSS at $f_0$ dB TYPICAL	BANDWIDTH SELECTION -1dBc % $f_0$	STOPBAND ATTENUATION		
				dBc MINIMUM	FREQUENCY 1	FREQUENCY 2
CENTER FREQUENCY – 500 Hz to 200 MHz – specify any $f_0$ within that range						
KG3	3 (6)	6.1 - 3.8	3 to 5	-30	$0.70 \times f_0$	$1.23 \times f_0$
		3.8 - 1.9	> 5 to 10	-30	$0.30 \times f_0$	$1.40 \times f_0$
KG4	4 (8)	7.3 - 4.5	3 to 5	-40	$0.72 \times f_0$	$1.22 \times f_0$
		4.5 - 2.1	> 5 to 10	-40	$0.30 \times f_0$	$1.40 \times f_0$
KG5	5 (10)	7.6 - 4.5	3 to 5	-50	$0.70 \times f_0$	$1.25 \times f_0$

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: KG4R-144M-5.76M-50-65A**

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

**These RoHS components meet the  $\leq 0.1\%$  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): 3-5 (6-10)
- VSWR at  $f_0$ : 1.5:1 Typical
- Input Power: 20 mW
- Case Type: Refer to **Case Selection Guide**
- Case Options: PCB, SMT, BNC or SMA
- Normalized Response: Refer to **Graphs**
- Product Info: Refer to **KG Series**

#### TERMINATIONS:

50 $\Omega$	100 MHz - 200 MHz
50 $\Omega$ or 75 $\Omega$	300 kHz - 100 MHz
1 k $\Omega$ - 50 $\Omega$	10 kHz - 300 kHz
10 k $\Omega$ - 1 k $\Omega$	500 Hz - 10 kHz

#### STOPBAND FREQUENCY CALCULATIONS:

Using part number KG4-144M-5.76M-50-65A, we know that the filter is a 4 pole Gaussian bandpass filter. Scroll down to series number KG4. Moving to the right we select the 3% bandwidth range. Moving to the right again we find the stopband specification listed as -40dBc minimum at  $0.72 \times f_0$  and  $1.22 \times f_0$ . Thus, the -40dBc frequencies are at 103.68 MHz ( $0.72 \times 144$  kHz) and at 175.68 MHz ( $1.22 \times 144$  kHz), respectively.

#### PART NUMBER DERIVATION:

KG4 \*(R) -144M -5.76M -50 -65A  
1 2 3 4 5 6 7

- 1) Series, KG
- 2) Number of poles, 4
- \*3) "R" RoHS compliant. Allow for longer lead time.
- 4) The Center Frequency,  $f_0$
- 5) The -3dBc passband bandwidth. It may also be specified as a percentage of  $f_0$ . Thus, instead of 5.76 MHz, use 4P.
- 6) Terminations
- 7) Case selection from the case selection guide.