

## 30 Series



### Combine

Frequency Range from 400 MHz to 26 GHz

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 – 400 MHz to 26 GHz – specify any $f_0$ within that range					
303	3 (6)	1.5 - 0.6	1.5 to 3	-40	0.870 x $f_0$ 1.110 x $f_0$
		0.6 - 0.4	> 3 to 5	-40	0.770 x $f_0$ 1.170 x $f_0$
		0.4 - 0.3	> 5 to 10	-40	0.500 x $f_0$ 1.300 x $f_0$
		0.3 - 0.3	> 10 to 15	-40	0.200 x $f_0$ 1.400 x $f_0$
304	4 (8)	1.5 - 0.8	1.5 to 3	-50	0.904 x $f_0$ 1.084 x $f_0$
		0.8 - 0.6	> 3 to 5	-50	0.835 x $f_0$ 1.140 x $f_0$
		0.6 - 0.4	> 5 to 10	-50	0.600 x $f_0$ 1.250 x $f_0$
		0.4 - 0.3	> 10 to 15	-50	0.330 x $f_0$ 1.320 x $f_0$
305	5 (10)	1.8 - 1.0	1.5 to 3	-50	0.937 x $f_0$ 1.058 x $f_0$
		1.0 - 0.7	> 3 to 5	-50	0.900 x $f_0$ 1.090 x $f_0$
		0.7 - 0.4	> 5 to 10	-50	0.770 x $f_0$ 1.170 x $f_0$
		0.4 - 0.3	> 10 to 15	-50	0.600 x $f_0$ 1.240 x $f_0$
306	6 (12)	2.2 - 1.3	1.5 to 3	-60	0.942 x $f_0$ 1.053 x $f_0$
		1.3 - 0.9	> 3 to 5	-60	0.905 x $f_0$ 1.085 x $f_0$
		0.9 - 0.5	> 5 to 10	-60	0.800 x $f_0$ 1.150 x $f_0$
		0.5 - 0.4	> 10 to 15	-60	0.680 x $f_0$ 1.220 x $f_0$
307	7 (14)	2.5 - 1.5	1.5 to 3	-60	0.953 x $f_0$ 1.045 x $f_0$
		1.5 - 1.0	> 3 to 5	-60	0.925 x $f_0$ 1.068 x $f_0$
		1.0 - 0.6	> 5 to 10	-60	0.850 x $f_0$ 1.125 x $f_0$
		0.6 - 0.5	> 10 to 15	-60	0.760 x $f_0$ 1.180 x $f_0$
308	8 (16)	2.9 - 1.7	1.5 to 3	-60	0.958 x $f_0$ 1.040 x $f_0$
		1.7 - 1.2	> 3 to 5	-60	0.935 x $f_0$ 1.060 x $f_0$
		1.2 - 0.7	> 5 to 10	-60	0.875 x $f_0$ 1.110 x $f_0$
		0.7 - 0.5	> 10 to 15	-60	0.800 x $f_0$ 1.150 x $f_0$
309	9 (18)	3.2 - 1.9	1.5 to 3	-60	0.962 x $f_0$ 1.037 x $f_0$
		1.9 - 1.3	> 3 to 5	-60	0.942 x $f_0$ 1.055 x $f_0$
		1.3 - 0.8	> 5 to 10	-60	0.885 x $f_0$ 1.100 x $f_0$
		0.8 - 0.6	> 10 to 15	-60	0.835 x $f_0$ 1.140 x $f_0$

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: 307R-5800M-150M-A**

**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): 3-9 (6-18)
- VSWR at  $f_0$ : 1.5:1 Typical
- Input Power: 1 W, consult factory for options
- Case Type: Cases are custom-made; contact factory
- Case Options: SMA female connectors (exclusively)
- Normalized Response: Refer to **Graphs**
- Product Info: Refer to **30 Series**

#### TERMINATIONS:

50  $\Omega$       400 MHz - 26 GHz

#### STOPBAND FREQUENCY CALCULATIONS:

Using part number 307-5800M-150M-A, we know that the filter is a 7 pole Combine bandpass filter. Scroll down to series number 307. Moving to the right we select the 2.59% bandwidth range. Moving to the right again we find the stopband specification listed as -60dBc minimum at 0.953 x  $f_0$  and 1.045 x  $f_0$ . Thus, the -60dBc frequencies are at 5527.4 MHz (0.953 x 5800 MHz) and at 6061 MHz (1.045 x 5800 MHz), respectively.

#### PART NUMBER DERIVATION:

307 \*(R) - 5800M -150M -A  
1 2 3 4 5 6

1) Series, 30

2) Number of poles, 7

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

4) The Center Frequency,  $f_0$

5) The -1dBc minimum passband bandwidth. It may also be specified as a percentage of  $f_0$ . Thus, instead of 150 MHz, use 2.59P.

6) SMA female connectors are the only option

**These cases are custom-made per order so typical delivery time for this series is 6-8 weeks.**