

## HE Series



### Elliptical Function

Frequency Range from 1 kHz to 200 MHz

Application-Specific Designs

SERIES NUMBER	NUMBER OF POLES	INSERTION LOSS at 5.0 x f <sub>-3dBc</sub> dB MAXIMUM	STOPBAND	
			ATTENUATION dBc MINIMUM	FREQUENCY
FREQUENCY -3dBc – 1 kHz to 200 MHz – specify any f within that range				
HE7415	7	0.5	-40	0.86 x f <sub>-3dBc</sub>
HE7610	7	0.5	-60	0.71 x f <sub>-3dBc</sub>
HE7890	7	0.5	-80	0.52 x f <sub>-3dBc</sub>
HE9410	9	0.5	-40	0.90 x f <sub>-3dBc</sub>
HE9615	9	0.5	-60	0.86 x f <sub>-3dBc</sub>
HE9840	9	0.5	-80	0.71 x f <sub>-3dBc</sub>
HE1141	11	0.5	-40	0.94 x f <sub>-3dBc</sub>
HE1161	11	0.5	-60	0.90 x f <sub>-3dBc</sub>
HE1182	11	0.5	-80	0.83 x f <sub>-3dBc</sub>

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: HE1182R-100M-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 Poles: 7, 9 or 11
- VSWR: 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 **HE Series**

#### TERMINATIONS:

50 Ω	100 MHz - 200 MHz
50 Ω or 75 Ω	300 kHz - 100 MHz
1 kΩ - 50 Ω	10 kHz - 300 kHz
10 kΩ - 1 kΩ	1 kHz - 10 kHz

#### STOPBAND FREQUENCY CALCULATIONS:

Using part number HE1182-100M-50-720A, we know that the filter is an 11 pole Elliptical Function highpass filter. Scroll down to series number HE1182. Moving to the right we find the stopband specification listed as -80dBc minimum at 0.83 x f<sub>-3dBc</sub>. Thus, the -80dBc frequency is at 83 MHz (0.83 x 100 MHz).

#### PART NUMBER DERIVATION:

HE1182	*(T)	** (R)	-100M	-50	-720A
1	2	3	4	5	6

- 1) Series, HE1182 (which has 11 poles)
- \*2) The "T" option specifies a filter with low THD for ADC/DAC testing. When selected the minimum THD is > -80dBc, -96dBc typical. Testing requires a bandpass filter.
- \*\*3) "R" RoHS compliant. Allow for longer lead time.
- 4) f<sub>-3dBc</sub>
- 5) Terminations
- 6) Case selection from the case selection guide. "T" option cases are larger than standard.