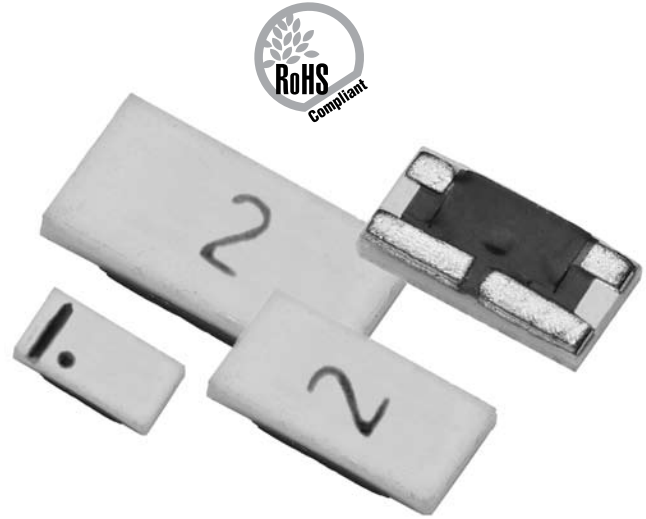


TFA Series

Fixed Thin Film Precision Chip Attenuator

The Ohmite TFA series attenuators are designed with the electrodes and resistance patterns formed on a ceramic substrate, resistance is protected by an epoxy-based material on the resistive film. The electrodes are then plated on the exterior. These attenuators are offered in multiple sizes all covering a wide frequency range.



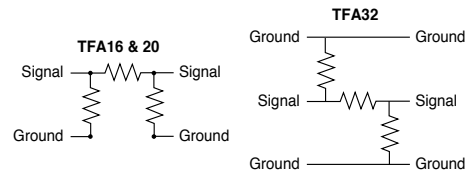
SERIES SPECIFICATIONS

| Series | Type (Size) | Power Rating (@70°C) | Impedance | Attenuation Tolerance | | | VSWR | | |
|--------|-------------|----------------------|-----------|-----------------------|--------|--------|------|-------|-------|
| | | | | 5GHz | 10GHz | 20GHz | 5GHz | 10GHz | 20GHz |
| TFA16 | 1608 (0603) | 64mW | | | | | | | |
| TFA20 | 2012 (0805) | 100mW | 50Ω | ±0.2db | ±0.3db | ±0.5db | <1.2 | <1.3 | <1.5 |
| TFA32 | 3216 (1206) | 125mW | | | | | | | |

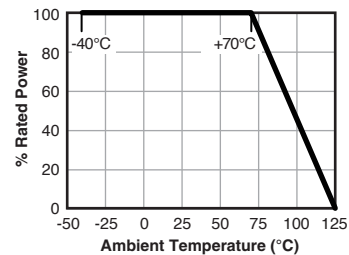
CHARACTERISTICS

| | |
|-----------------------------|--|
| Type | Thin Film |
| Terminal Plating | Sn |
| VSWR | DC ~ 5GHz: Less than 1.2 ~ 10GHz: Less than 1.3 ~ 20GHz: Less than 1.5 |
| Frequency Range | DC ~ 20GHz |
| Operating temperature range | -40 ~ +125°C |
| Rated ambient temperature | +70°C |

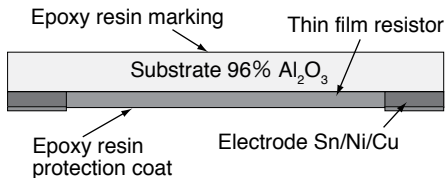
Circuit Schematic



Derating



Construction



TFA Series

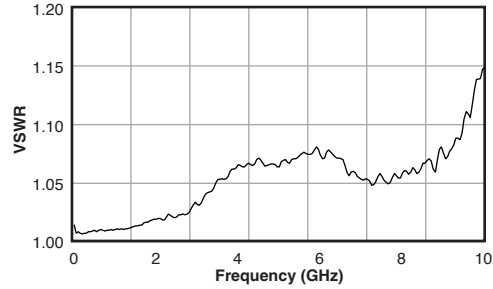
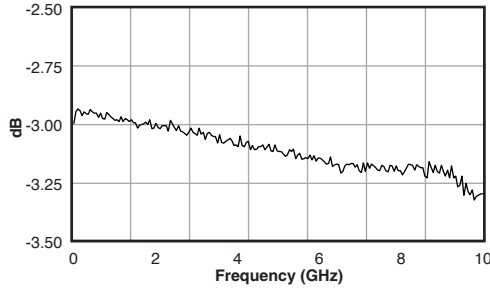
Fixed Thin Film Precision Chip Attenuator

PERFORMANCE CHARACTERISTICS

| Parameter | Condition | Tolerance | |
|---------------------|---|---------------------|-------------|
| | | Attenuation | Impedance |
| Short Time Overload | Apply a voltage 2.5 times the rated power for 5 seconds | $\pm 0.02\text{dB}$ | $\pm 0.2\%$ |
| Rated load | $70\pm 3^\circ\text{C}$, rated voltage 90 minutes applied, 30 minutes pause repeated for 1000 hours. | $\pm 0.04\text{dB}$ | $\pm 0.5\%$ |
| Moisture load | $60\pm 2^\circ\text{C}$ 90-95%RH Rated voltage is applied for 90 minutes and 30 minutes pause is repeated for 1000 hours. | $\pm 0.04\text{dB}$ | $\pm 0.5\%$ |
| Thermal cycling | 5 cycles of [-40°C 30 min. / Room temp. 3 min. / $+125^\circ\text{C}$ 30 min. / room temp. 3 min] | $\pm 0.02\text{dB}$ | $\pm 0.2\%$ |
| Soldering heat | Immersed in the molten solder at $260\pm 5^\circ\text{C}$ for 10 ± 1 sec. | $\pm 0.02\text{dB}$ | $\pm 0.2\%$ |

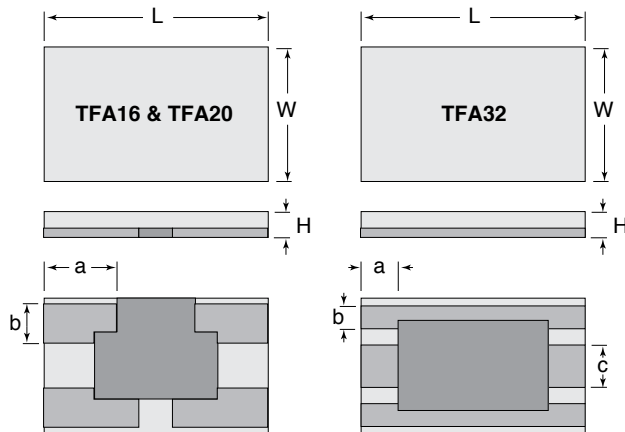
Frequency Characteristics

Example: TFA16C03DBER

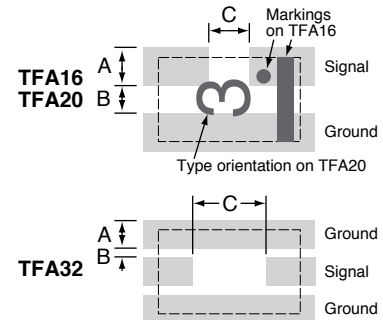


DIMENSIONS

(mm)



Land Pattern



| Part | W | L | a | b | c | H | A | B | C |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|-------|-------|-------|
| TFA16 | 0.85 ± 0.20 | 1.60 ± 0.20 | 0.43 ± 0.15 | 0.24 ± 0.12 | 0.24 ± 0.12 | 0.5 ± 0.20 | 0.50 | 0.30 | 0.40 |
| TFA20 | 1.25 ± 0.20 | 2.00 ± 0.20 | 0.58 ± 0.15 | 0.42 ± 0.15 | 0.45 ± 0.15 | 0.5 ± 0.20 | 0.60 | 0.30 | 0.50 |
| TFA32 | 1.65 ± 0.20 | 3.05 ± 0.20 | 0.45 ± 0.15 | 0.38 ± 0.15 | 0.38 ± 0.15 | 0.5 ± 0.20 | 0.500 | 0.375 | 2.000 |