



**THE DATASHEET OF
MAT10080**



Attenuator DIE

DC - 20 GHz



MAT10xxx Series
Rev. V5

Features

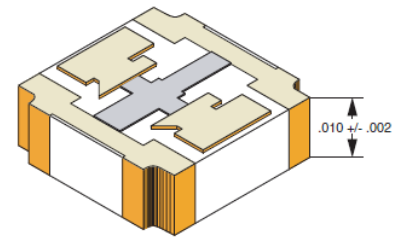
- Medium Power Handling 2 W CW
- Flat Response from DC to 20 GHz
- Return Loss:
 - >18 dB DC to 12 GHz
 - >16 dB 13 to 20 GHz
- Space Saving Footprint:
 - 0.030" x 0.030" (0.762 x 0.762 mm)
- Very Good Stability Over Temperature (TRC <100 PPM)
- Ground Wrap to Top (No ground bonding required)
- RoHS* Compliant

Description

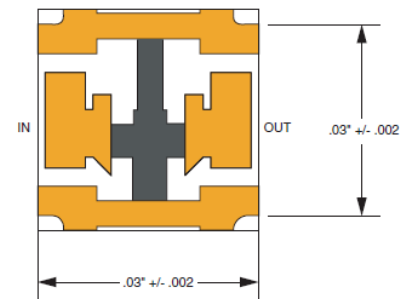
These fixed attenuator chips are fabricated using our state of the art thin film metallization and advanced photolithography technology.

All devices are available in chip form with a metalized ground connection on the back. This ground is wrapped around on the four corners of the chip so additional ground bonding ribbon is not required.

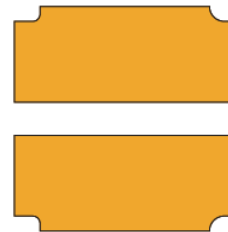
The chips may be attached using conductive epoxy or solder preform. Gold contacts on the input and output pads make assembly, using standard bonding equipment, fast and reliable. Custom values and configuration available on request.



Front to back metallization in 4 places



Bonding pad sizes and resistor outline may differ from value to value.



Back Side

Electrical Specifications: $T_A = +25^\circ\text{C}$

| Part Number | Attenuation (dB) | Insertion Loss (dB) | Return Loss (dB) |
|-------------|------------------|---------------------|------------------|
| MAT10000 | 0 | +/-0.30 | >18 |
| MAT10010 | 1 | +/-0.30 | >18 |
| MAT10020 | 2 | +/-0.30 | >18 |
| MAT10030 | 3 | +/-0.30 | >18 |
| MAT10040 | 4 | +/-0.30 | >18 |
| MAT10050 | 5 | +/-0.30 | >18 |
| MAT10060 | 6 | +/-0.35 | >18 |
| MAT10070 | 7 | +/-0.35 | >18 |
| MAT10080 | 8 | +/-0.35 | >18 |

CONTINUED

1 * Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Electrical Specifications: T_A = +25°C

| Part Number | Attenuation (dB) | Insertion Loss (dB) | Return Loss (dB) |
|-------------|------------------|---------------------|------------------|
| MAT10090 | 9 | +/-0.35 | >18 |
| MAT10100 | 10 | +/-0.35 | >18 |
| MAT10110 | 11 | +/-0.40 | >18 |
| MAT10120 | 12 | +/-0.40 | >18 |
| MAT10130 | 13 | +/-0.40 | >18 |
| MAT10140 | 14 | +/-0.40 | >18 |
| MAT10150 | 15 | +/-0.40 | >18 |
| MAT10160 | 16 | +/-0.50 | >18 |
| MAT10170 | 17 | +/-0.50 | >18 |
| MAT10180 | 18 | +/-0.50 | >18 |
| MAT10190 | 19 | +/-0.50 | >18 |
| MAT10200 | 20 | +/-0.50 | >18 |
| MAT10210 | 21 | +/-0.60 | >18 |
| MAT10220 | 22 | +/-0.60 | >18 |
| MAT10230 | 23 | +/-0.60 | >18 |
| MAT10240 | 24 | +/-0.60 | >18 |
| MAT10250 | 25 | +/-0.60 | >18 |
| MAT10260 | 26 | +/-1.00 | >18 |
| MAT10270 | 27 | +/-1.00 | >18 |
| MAT10280 | 28 | +/-1.00 | >18 |
| MAT10290 | 29 | +/-1.00 | >18 |
| MAT10300 | 30 | +/-1.00 | >18 |

Absolute Maximum Ratings^{1,2}

| Parameter | Absolute Maximum |
|-----------------------|-----------------------|
| RF Incident Power | 33 dBm |
| Operating Temperature | -55°C to +150°C |
| Storage Temperature | -65°C to +150°C |
| Assembly Temperature | +280°C for 10 seconds |

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

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