

**Low Cost SMT Dual Band Diplexer  
AMPS/PCS and GSM/DCS**

**MAFLCC0003  
V2**

**Features**

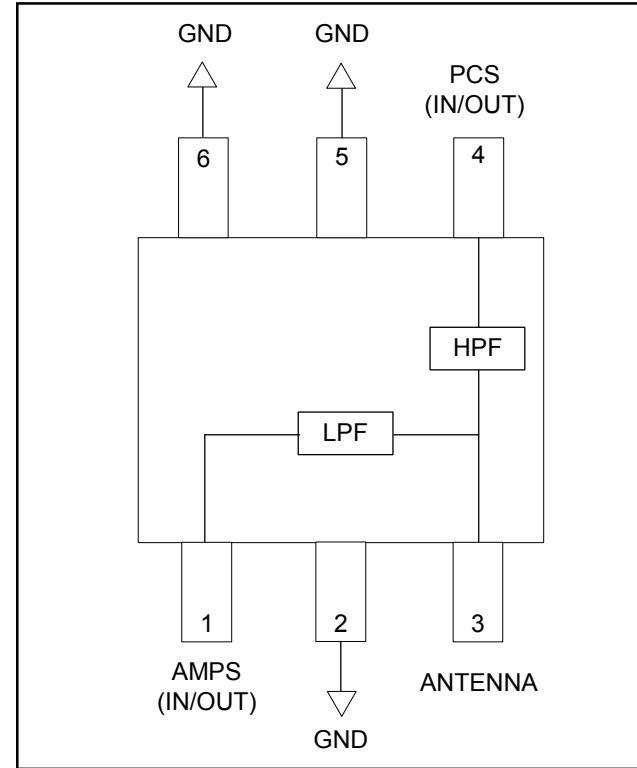
- Small Size and Low Profile
- Superior Repeatability
- Passbands 824 – 960 MHz and 1850 – 1990 MHz
- Passbands 880 – 960 MHz and 1700 – 1900 MHz
- Typical Passband Insertion Loss: 0.5 dB
- 2 Watt Power Handling
- Low Cost
- Lead-Free SOT-26 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS\* Compliant Version of DP52-0005

**Description**

M/A-COM's MAFLCC0003 is an IC-based Monolithic Diplexer in a low cost SOT-26 plastic package. This Diplexer is ideally suited for applications where small size, low insertion loss, superior repeatability, and low cost are required. Typical applications include AMPS/PCS and GSM/DCS dual mode portable devices.

The MAFLCC0003 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

**Functional Block Diagram<sup>1</sup>**



1. All unused pins must be RF and DC grounded.

**Ordering Information**

Part Number	Package
MAFLCC0003	Bulk Packaging
MAFLCC0003-TR	1000 piece reel
MAFLCC0003-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

Note: Die quantity varies.

**Pin Configuration**

Pin No.	Function	Pin No.	Function
1	AMPS IN/OUT	4	PCS IN/OUT
2	GND	5	GND
3	ANTENNA	6	GND

\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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**880 – 960 / 824 – 960 Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\Omega$**

Parameter	Units	Min	Typ	Max
Passband Insertion Loss	dB	—	0.7	0.9
Stopband Isolation	dB	17	19	—
Passband VSWR	—	—	1.3:1	1.5:1

**1700 – 1900 / 1850 – 1990 Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\Omega$**

Parameter	Units	Min	Typ	Max
Passband Insertion Loss	dB	—	0.6	0.8
Stopband Isolation	dB	17	20	—
Passband VSWR	—	—	1.3:1	1.5:1

**Absolute Maximum Ratings <sup>2,3</sup>**

Parameter	Absolute Maximum
Input Power	2 W CW
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

- Exceeding any one or combination of these limits may cause permanent damage to this device.
- M/A-COM does not recommend sustained operation near these survivability limits.

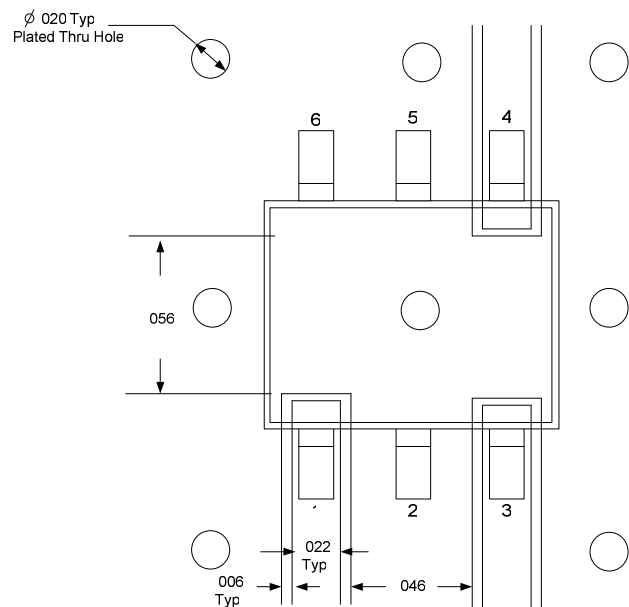
**Handling Procedures**

Please observe the following precautions to avoid damage:

**Static Sensitivity**

GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

**Recommended PCB Configuration**

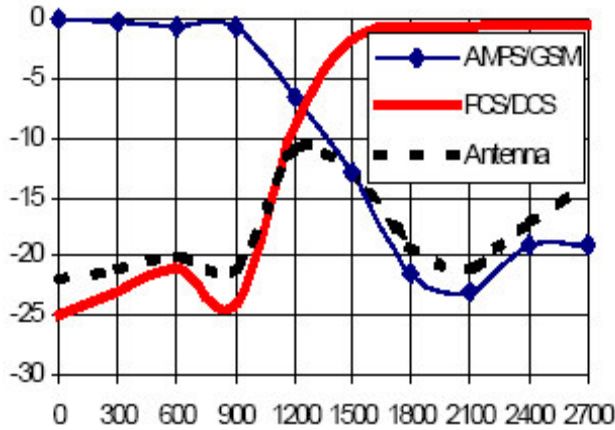


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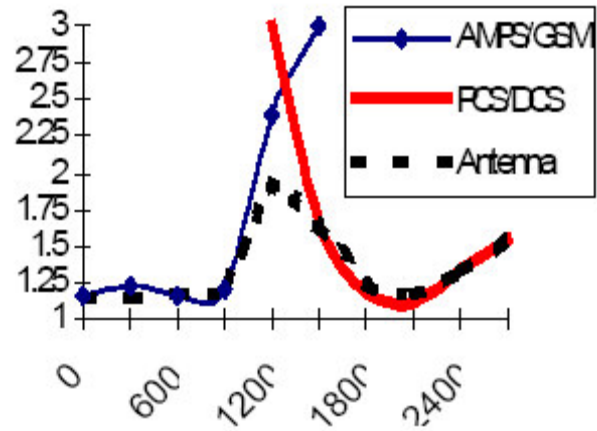
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**Typical Performance Curves @ 25°C**

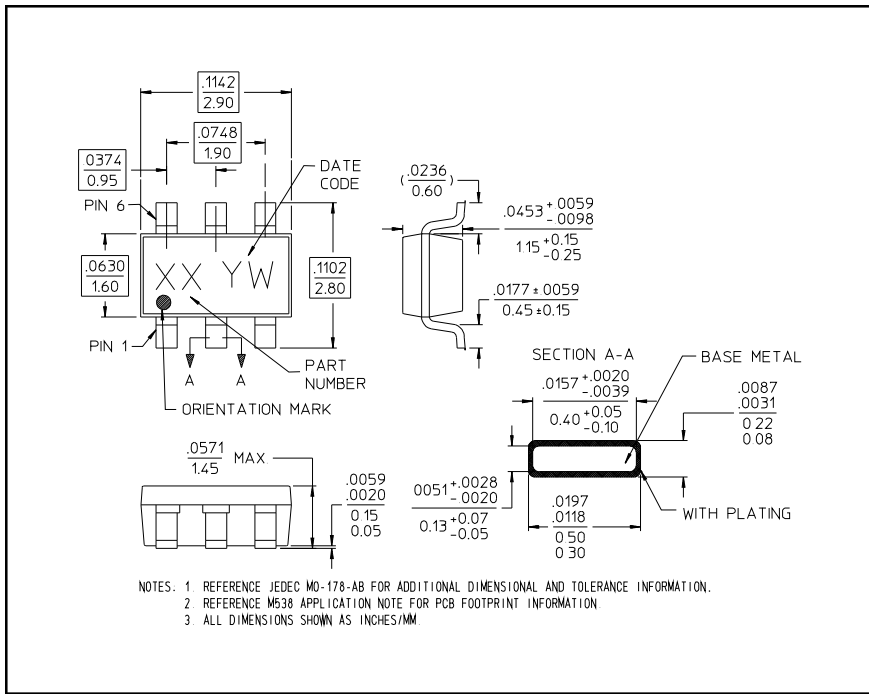
*Insertion Loss vs. Frequency*



*VSWR vs. Frequency*



**Lead-Free, SOT-26<sup>†</sup>**



<sup>†</sup> Reference Application Note M538 for lead-free solder reflow recommendations.