

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

**MAFLCC0003
V2**

Features

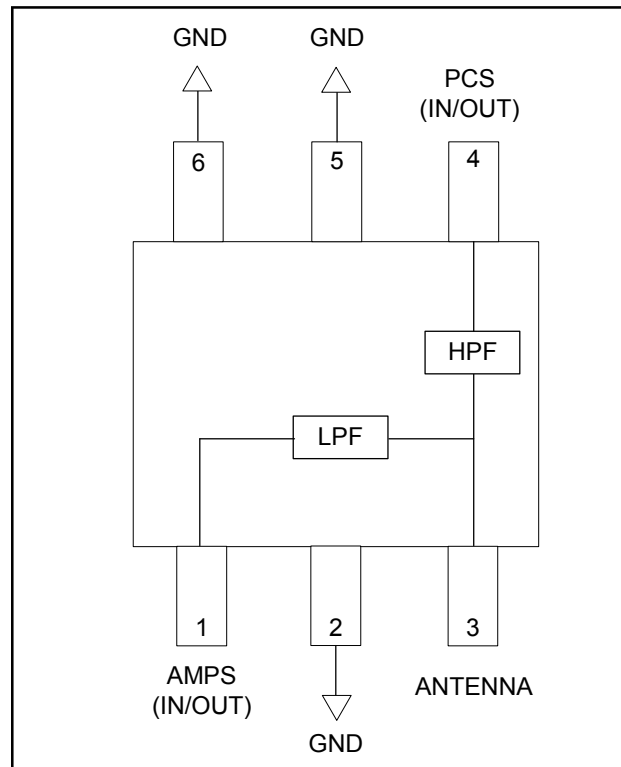
- Small Size and Low Profile
- Superior Repeatability
- Passbands 824 – 960 MHz and 1850 – 1990 MHz
- Passbands 880 – 960 MHz and 1700 – 1900 MHz
- Typical Passband Insertion Loss: 0.5 dB
- 2 Watt Power Handling
- Low Cost
- Lead-Free SOT-26 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “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 Diagram¹



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 ^{2,3}

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.

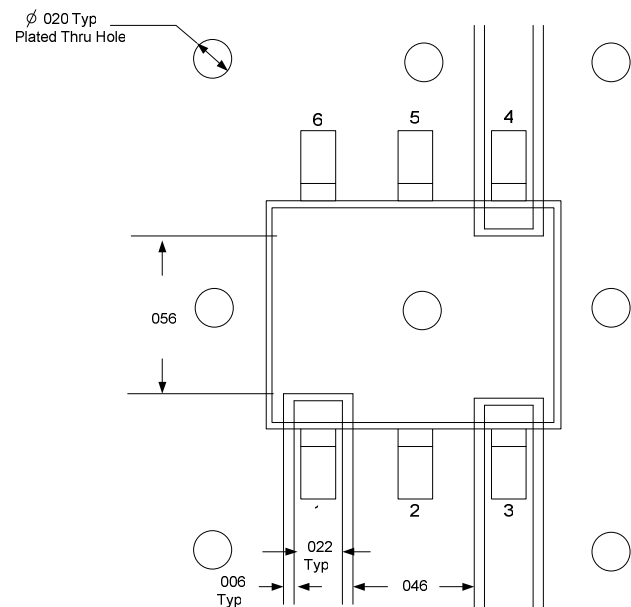
Handling Procedures

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

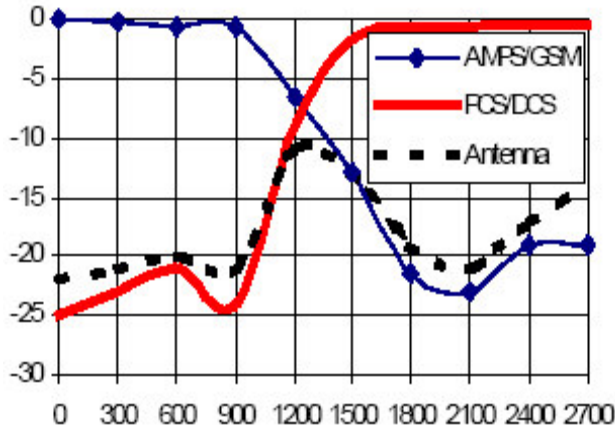


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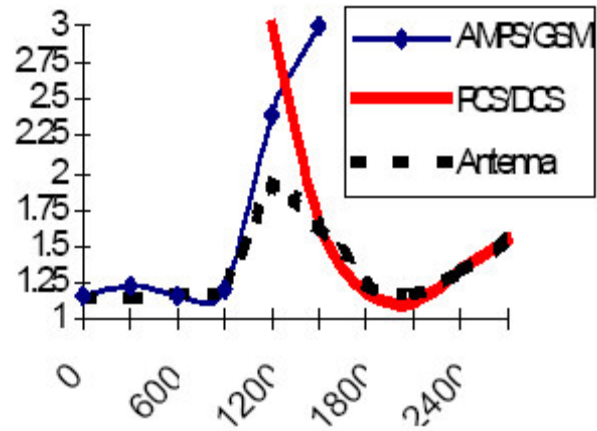
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Typical Performance Curves @ 25°C

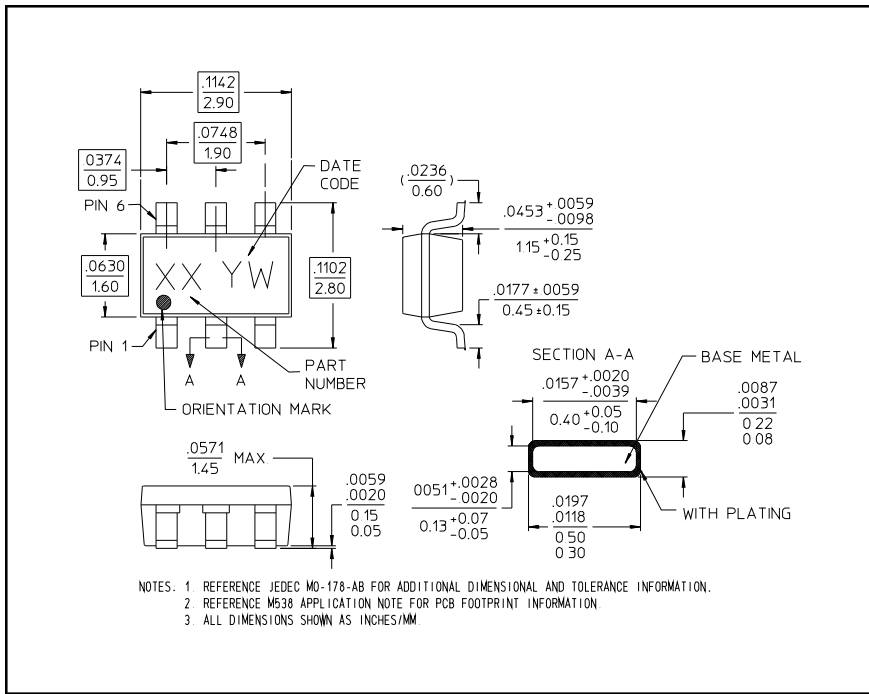
Insertion Loss vs. Frequency



VSWR vs. Frequency



Lead-Free, SOT-26[†]



[†] Reference Application Note M538 for lead-free solder reflow recommendations.