

Low Cost SMT 17dB Bi-Directional Coupler 824 – 960 MHz

Rev. V2

Features

- Device is Bi-Directional
- · Small Size and Low Profile
- Superior Repeatability
- Typical Insertion Loss 0.3 dB
- Typical Directivity 15 dB
- 2 Watt Power Handling
- Lead-Free SO-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free "Green" Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of CH20-0032-17G

Description

M/A-COM's MACPCC0002 is an IC based monolithic bi-directional coupler in a low cost SO-8 plastic package. This 17 dB coupler is ideally suited for applications where power monitoring, small size, low insertion loss, superior repeatability, and low cost are required. Typical applications include base station switching networks, power monitoring in handhelds and other communication applications where size and PCB real estate is a premium. Available in tape and reel.

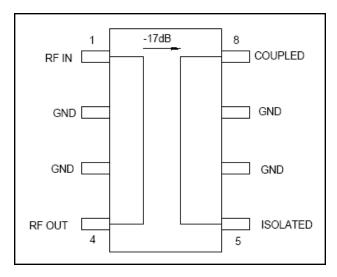
The MACPCC0002 is fabricated using a passiveintegrated circuit process. The process features full chip passivation for increased performance and reliability.

Ordering Information

Part Number	Package	
MACPCC0002	Bulk Packaging	
MACPCC0002-TR	1000 piece reel	
MACPCC0002-TB	Sample Test Board	

Note: Reference Application Note M513 for reel size information.

Functional Block Diagram



1. Pins 2, 3, 6, and 7 must be RF and DC grounded.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	RF IN	5	ISOLATED
2	GND	6	GND
3	GND	7	GND
4	RF OUT	8	COUPLED

^{*} Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

[•] India Tel: +91.80.4155721 • China Tel: +86.21.2407.1588

Visit www.macomtech.com for additional data sheets and product information.



Low Cost SMT 17dB Bi-Directional Coupler 824 – 960 MHz

Rev. V2

Electrical Specifications: $T_A = 25^{\circ}C$, $Z_0 = 50\Omega^{1}$

Parameter	Units	Min	Тур	Max
Insertion Loss	dB	_	0.3	0.5
VSWR	_	_	1.3:1	1.6:1
Coupling	dB	_	17±2	_
Coupling Flatness	dB	_	1.2	1.5
Directivity	dB	10	15	_

Absolute Maximum Ratings ^{2,3}

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

- 2. 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.

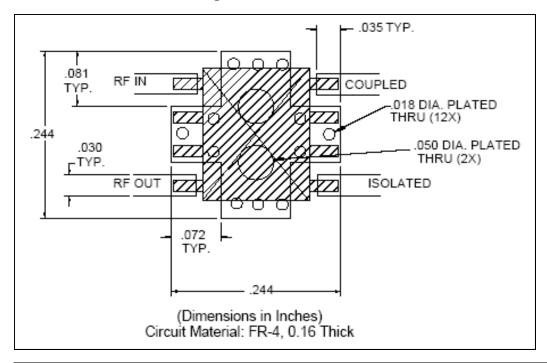
Handling Procedures

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



India Tel: +91.80.4155721
 China Tel: +86.21.2407.1588
 Visit www.macomtech.com for additional data sheets and product information.

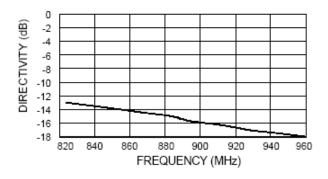


Low Cost SMT 17dB Bi-Directional Coupler 824 - 960 MHz

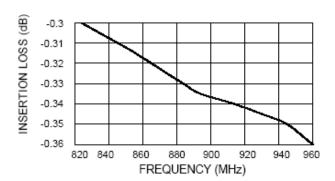
Rev. V2

Typical Performance Curves @ +25°C

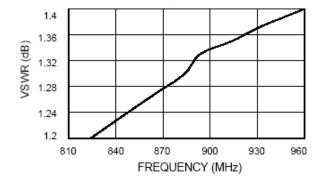
Directivity vs. Frequency



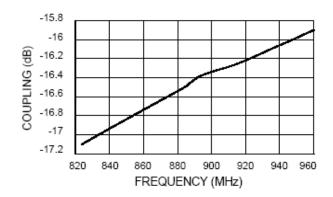
Insertion Loss vs. Frequency



VSWR vs. Frequency



Coupling vs. Frequency



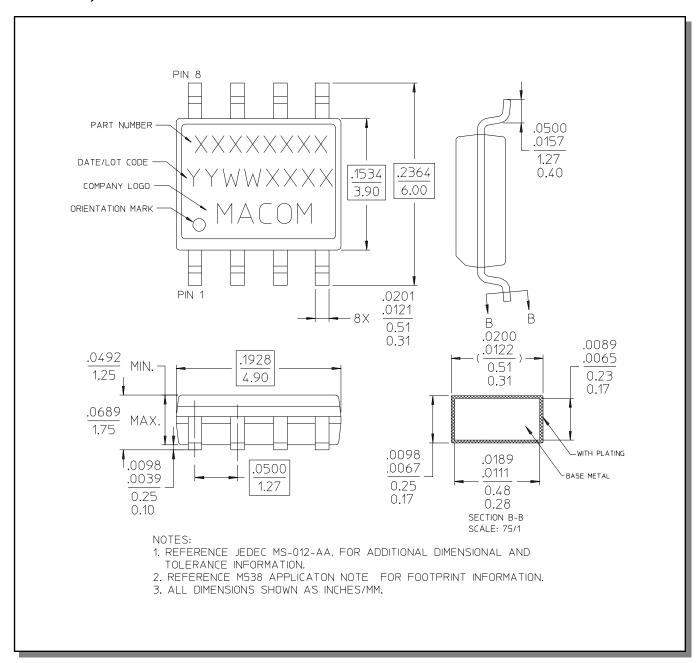
- India Tel: +91.80.4155721
- China Tel: +86.21.2407.1588 Visit www.macomtech.com for additional data sheets and product information.



Low Cost SMT 17dB Bi-Directional Coupler 824 - 960 MHz

Rev. V2

Lead-Free, SOIC-8[†]



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

is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.