BURR - BROWN®

100MS

EMI SHIELD

DESCRIPTION

The 100MS is an epoxy encapsulated electromagnetic/electrostatic interference (EMI) shield for use with circuits where sensitivity to EMI is critical. It was designed to attenuate EMI by converting electromagnetic field energy into heat that is absorbed by the shield and by shunting electrostatic fields to common. The 100MS may be used in applications to either confine or exclude EMI. Its cavity was designed for 28.45mm x 28.45mm x 7.24mm, 20-pin hybrid packages. The shields in the cover and base plate are in two separate halves to maintain the electrical isolation between the adjacent rows of pins of the module it encloses. Because of the spacing between the shield halves and epoxy flow holes, the 100MS provides a partial, but adequate low reluctance path for electromagnetic flux. The 100MS is well suited for use with isolation modules such as the Burr-Brown 3656, 722, and 724.

ASSEMBLY INSTRUCTIONS

Assemble the base plate to the module by pushing the pins of the module through the beveled holes in the base plate until the base plate and bottom of the module are in contact with each other. Place the cover over the module so the tabs are aligned and fit into the slots in the base plate. Bend the four wide shield soldering tabs protruding from the cover to make contact with the bare metal on the base plate. Solder these four tabs to insure the integrity of their connection to the base plate.

The 100MS and the module it contains are mounted and secured to a printed circuit board (PCB) by soldering the two narrow PCB solder tabs to the appropriate common. The PCB solder tab closest to the input side of the module should be soldered to the input common. The other tab should be soldered to the output common. Figure 2 illustrates the assembly of the 100MS.

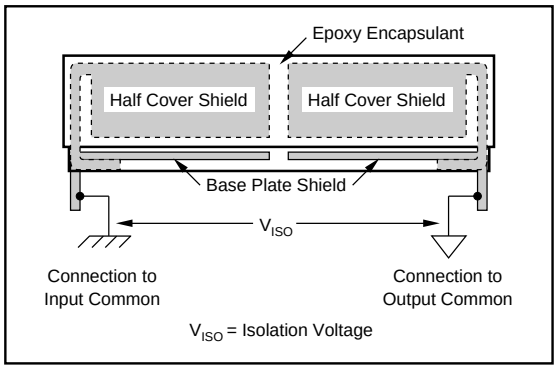

FIGURE 1. Cross-Sectional Side View of 100MS.

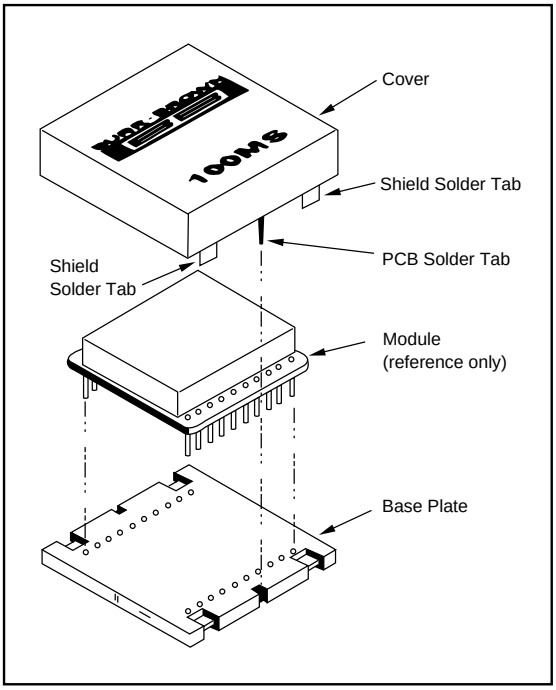

FIGURE 2. Assembly Diagram.

International Airport Industrial Park • Mailing Address: PO Box 11400 • Tucson, AZ 85734 • Street Address: 6730 S. Tucson Blvd. • Tucson, AZ 85706
Tel: (520) 746-1111 • Twx: 910-952-1111 • Cable: BBRCORP • Telex: 066-6491 • FAX: (520) 889-1510 • Immediate Product Info: (800) 548-6132

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SPECIFICATIONS

ELECTRICAL

Specifications apply between solder tabs.

PARAMETER	CONDITIONS	100MS MIN	100MS TYP	100MS MAX	UNITS
Isolation Voltage					
Rated Continuous, DC		3500			VDC
Rated Continuous, AC		2000			Vrms
Test	10 Seconds	8000			VDC
Capacitance			5		pF
Resistance			10^{10}		Ω
Leakage Current	120V, 60Hz		0.23		µA

NOTE: Temperature changes ($\Delta T/\Delta t$) greater than 1°C per minute below 0°C and long term storage above 100°C are not recommended.

PACKAGE INFORMATION(1)

MODEL	PACKAGE	PACKAGE DRAWING NUMBER
100MS	EMI Shield	124

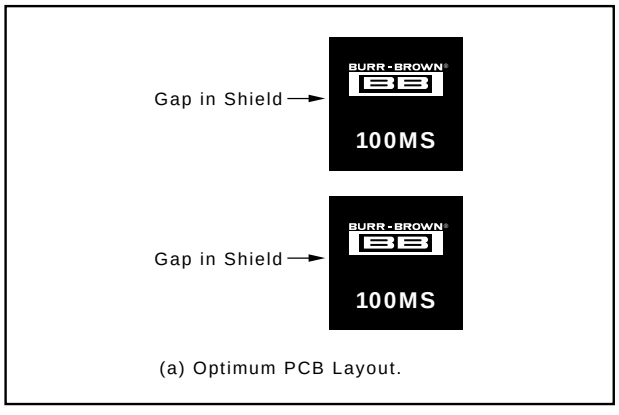
NOTE: (1) For detailed drawing and dimension table, please see end of data sheet, or Appendix D of Burr-Brown IC Data Book.

APPLICATIONS INFORMATION

MULTIPLE DEVICE ORIENTATION

A typical application for the 100MS is shown in Figure 3. Using multiple devices within 30mm of each other can cause them to interact by forming beat frequency interference outputs. The 100MS can reduce this interference by as much as a factor of 200:1 depending on the distance between the devices and their relative orientation.

Minimum EMI results when the gaps of both shields are paralleled as in Figure 3a.



(a) Optimum PCB Layout.

FIGURE 3a. Optimum PCB Layout. Orientation for minimum EMI.

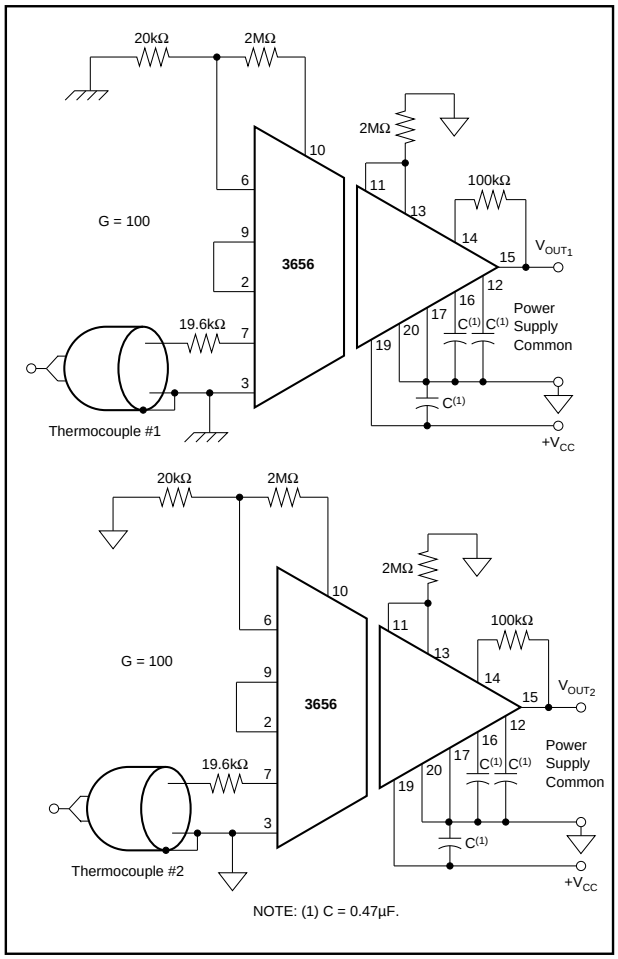


FIGURE 3b. Isolated Data Acquisition Input Circuitry. Orientation for Minimum EMI.