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.

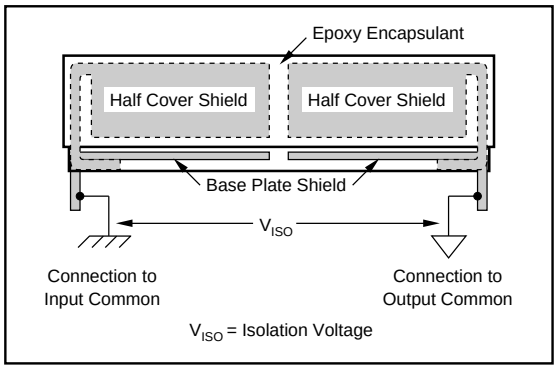

FIGURE 1. Cross-Sectional Side View of 100MS.

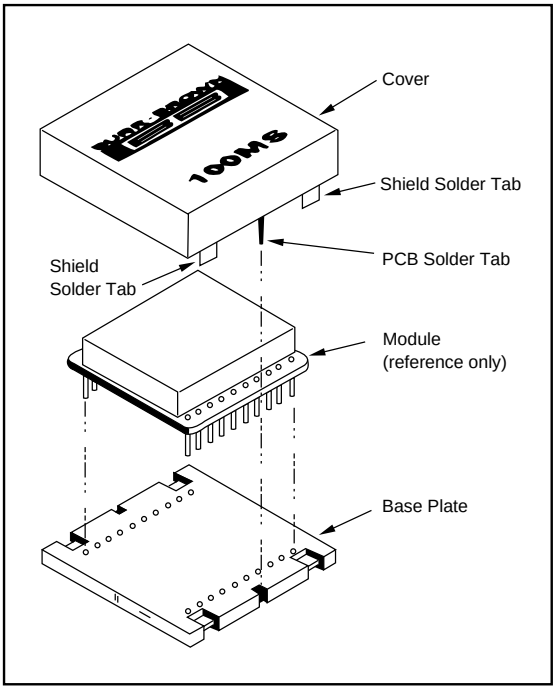

FIGURE 2. Assembly Diagram.

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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

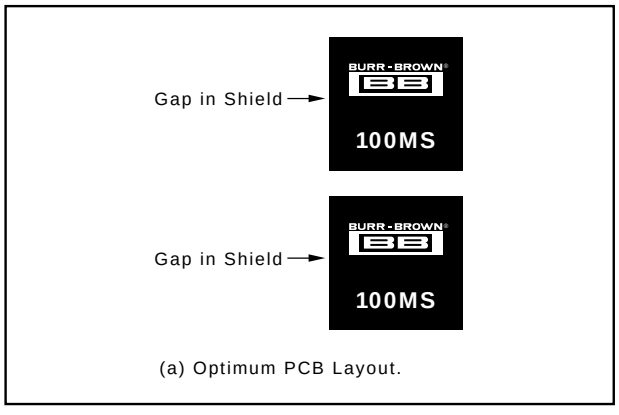
NOTE: (1) For detailed drawing and dimension table, please see end of data sheet, or Appendix D of Burr-Brown IC Data Book.

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.

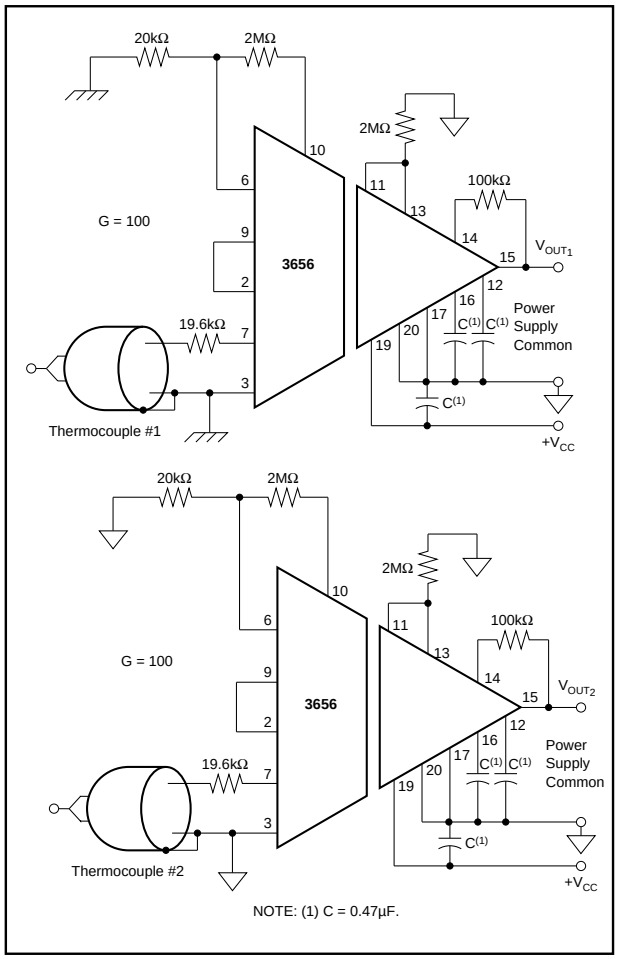


FIGURE 3b. Isolated Data Acquisition Input Circuitry. Orientation for Minimum EMI.

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
0100MS	ACTIVE	PDIP	NSP	20	25	TBD	Call TI	Call TI

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
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(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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