



**THE DATASHEET OF
MA8334-014**



Features

- ◆ SPDT and SP3T Series Diode Designs
- ◆ Low Intermodulation Distortion, 80 dBc
- ◆ High Average Power, 100 W
- ◆ Wide Bandwidth, 10 MHz to 1000 MHz
- ◆ Low Insertion Loss
- ◆ High Isolation
- ◆ RoHS Compliant

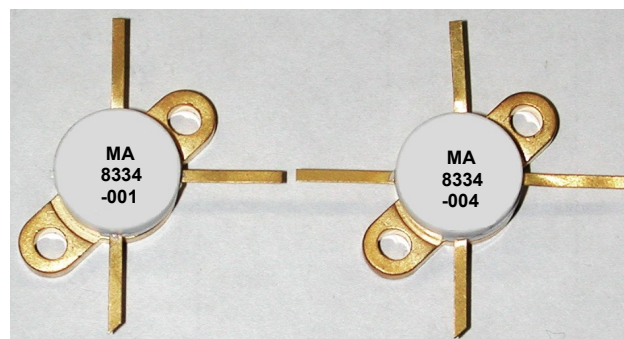
Description and Applications

M/A-COM Technology Solutions MA8334 Series of multi-throw high power switch modules are SPDT and SP3T devices intended for use from 10 MHz to 1000 MHz. They are designed to function with an input power of 100 watts, CW, into a 50 Ω load with a nominal source VSWR of 1.3:1. These switch modules are constructed using advanced hybrid technology and utilize PIN diode chips that have been optimized for low loss and high reliability. These switch modules make use of M/A-COM Tech's, high voltage, CERMACHIP™ PIN diode chip distinguished by its low thermal resistance and low intermodulation distortion. Applications for the MA8334 switch modules include 100W incident power T/R antenna and diversity switches. Typical bias conditions for nominal switch operation are +50mA @ +1V for the low loss condition and -100V @ 0 mA for isolation.

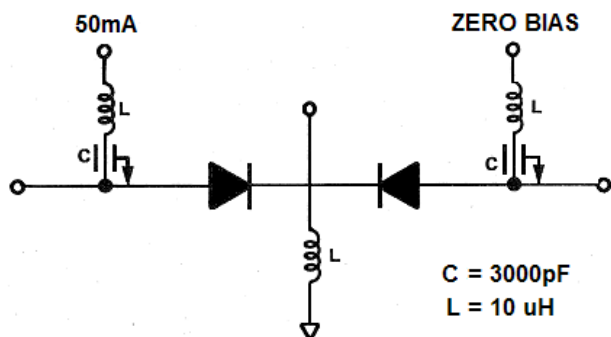
Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
Reverse Voltage	Voltage Rating per Diode
Forward Current	+ 250 mA per diode
Operating Temperature	-65 °C to +125 °C
Storage Temperature	-65 °C to +150 °C
Junction Temperature	+175 °C
Power Dissipation	5 W @ + 25 °C . derated to 0 W @ + 125 °C .

1. Operation of this device above any one of these parameters may cause permanent damage.

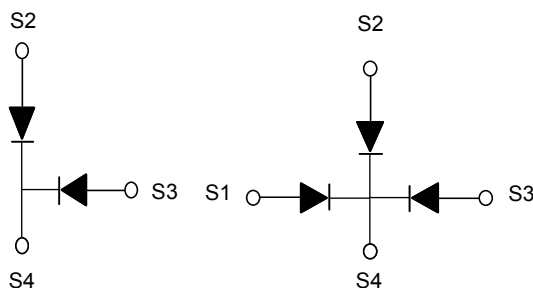


Circuit for Common Cathode Biasing



Suggested Bias Circuit for MA8334-001

Recommended D.C. Bias :
Low Loss: +50 mA @+ 1V, Isolation:-100V @ 0mA



Internal Wiring Diagram

High Power Multi-Throw PIN Diode Switch Modules

V5

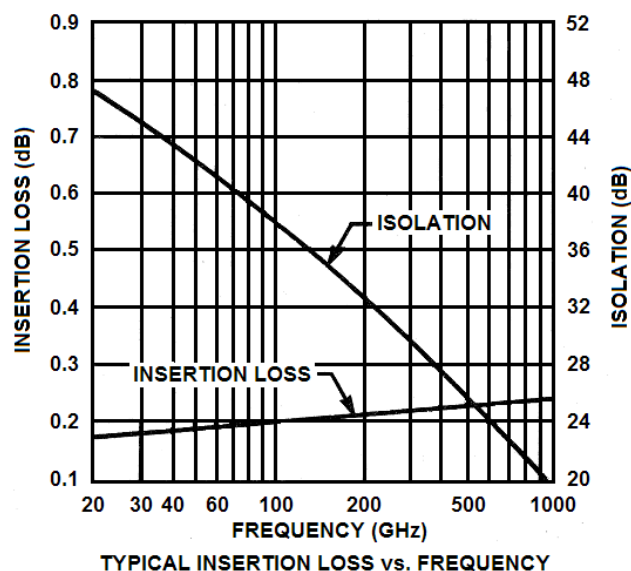
Specifications @ $T_A = +25^\circ\text{C}$

Model Number	Case Style	Maximum ³ CW Input Power (Watts)	Switch Type	Frequency Range (MHz)	Minimum Isolation ^{1,2} (dB)	Maximum Insertion Loss ^{1,2} (dB)	Nominal Carrier Lifetime ⁴ TL (μs)	Diode Voltage Rating (Volts)
MA8334-001	844-001	100	SPDT	10-1000	24	0.35	8	900
MA8334-004	844-004	100	SP3T	10-1000	24	0.35	8	900

Performance Notes:

- 1) For the MA8334-001 and the MA8334-004 switches, the small signal insertion loss and isolation measurements are performed at 450 MHz with the "ON" port forward biased @ +50mA, +1V and the "OFF" port reverse biased at 0V, 0mA. For (100W) high signal conditions, the "ON" port is forward biased @ +50mA, +1V and the "OFF" port is reverse biased at -100V, 0mA.
- 2) Maximum small signal VSWR for all switches is 1.35:1 with source and load VSWR < 1.05 :1 in 50 Ω system at 450 MHz
- 3) Nominal thermal resistance for each diode is 20°C/W.
- 4) Bias conditions +10mA/-6mA

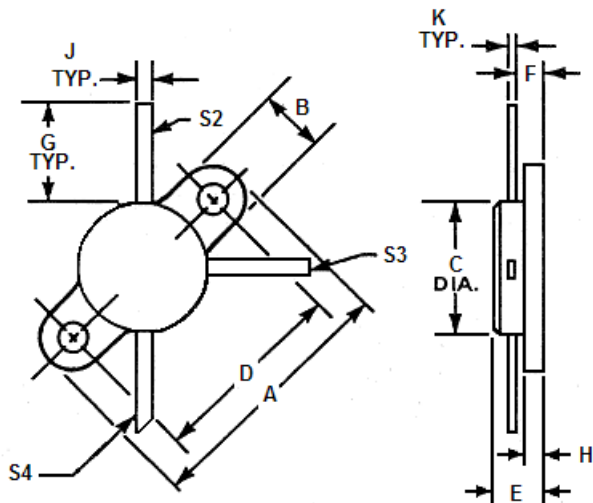
Performance Data



Note: Specifications subject to change without notification

Case Dimensions

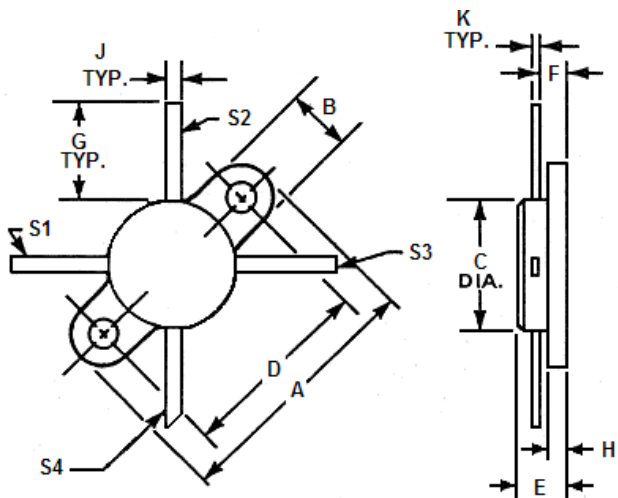
Case style 844-001



DIM.	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	.970	.980	24.6	24.9
B	.245	.255	6.22	6.48
C	.485	.495	12.3	12.6
D	.720	.730	18.3	18.5
E	.250	.292	6.35	7.42
F	.155	.182	3.94	4.62
G	.400	.420	10.2	10.7
H	.090	.110	2.29	2.79
J	.045	.055	1.14	1.40
K	.005	.007	.127	.178

Mounting holes are 0.118 +/- .010

Case style 844-004



DIM.	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	.970	.980	24.6	24.9
B	.245	.255	6.22	6.48
C	.485	.495	12.3	12.6
D	.720	.730	18.3	18.5
E	.250	.292	6.35	7.42
F	.155	.182	3.94	4.62
G	.400	.420	10.2	10.7
H	.090	.110	2.29	2.79
J	.045	.055	1.14	1.40
K	.005	.007	.127	.178

Mounting holes are 0.118 +/- .010

M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View MA8334-014 on WIN SOURCE](#)
- ⊖ [M/A-Com Technology Solutions](#) Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management