HYBRID ANTENNA SWITCH

MD004

1200—1300MHz, 5W, ANTENNA SWITCH

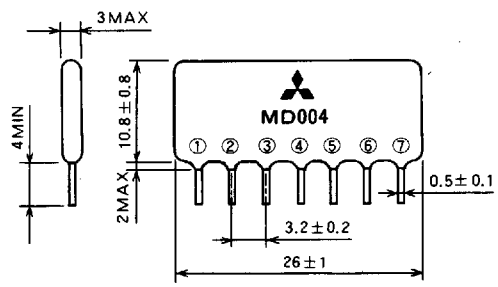
MINIATURE RF ANTENNA SWITCH

MD004 is designed to cover 1200 — 1300MHz, 5W, antenna switch module.

- Small, Easilly Mounted Package.
- High Isolation: 30dB Typ.
- Low Transmit Insertion Loss: TX-ANT 0.8dB Typ.
  ANT-RX 1.0dB Typ.
- Low Harmonic Output:
- Low Operating Current (TX-ANT ON): 50mA
- Off Through (ANT-RX ON): 0mA

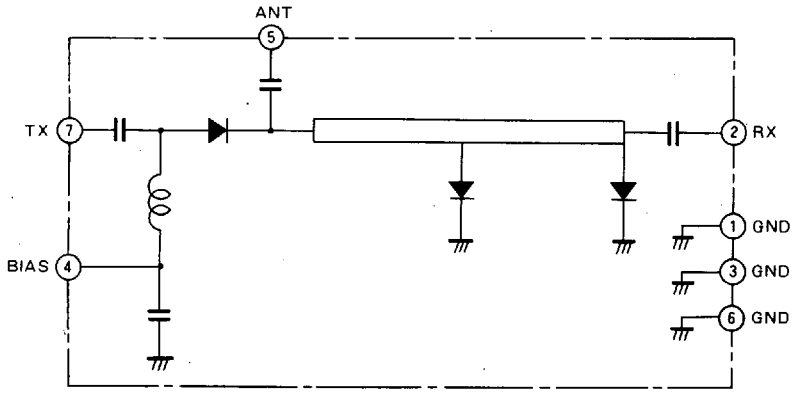
OUTLINE DRAWING

Dimensions in mm



① GND
② RX
③ GND
④ BIAS
⑤ ANT
⑥ GND
⑦ TX

EQUIVALENT CIRCUIT



OPERATING MATRIX

Bias condition	TX-ANT	ANT-RX
Ibias=50mA	ON	OFF
Ibias=0	OFF	ON

MITSUBISHI ELECTRIC

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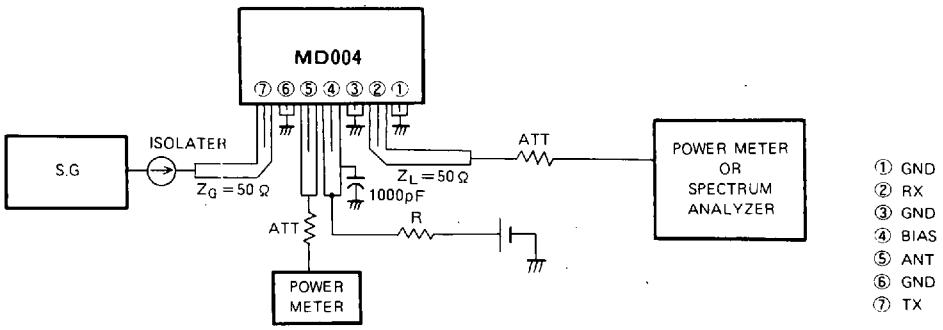
ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise noted)

Symbol	Parameter	Ratings	Unit
I_{bias}	Bias current	100	mA
P_{in}	Input power	10 @Ta≦60°C	W
T_{stg}	Storage temperature	−30 to 85	°C

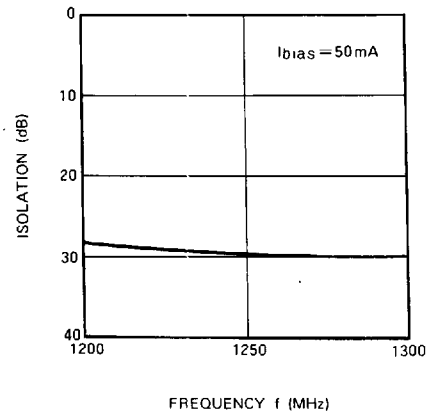
ELECTRICAL CHARACTERISTICS (Ta=25°C)

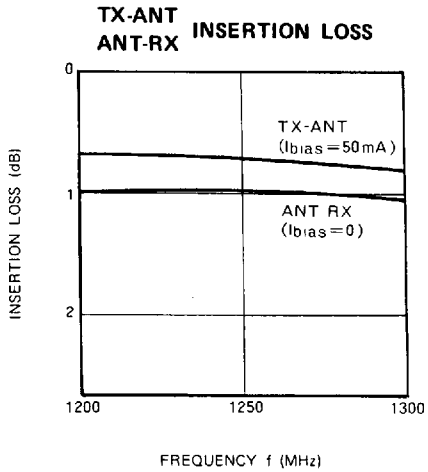
Symbol	Parameter	Test condition	Limits			Unit
			Min	Typ	Max	
f	Frequency Range		1200		1300	MHz
ISO	Isolation (TX-RX)	P_{in}=8W, I_{bias}=50mA, ANT port terminated 50Ω	25	30		dB
α_1	Insertion loss (TX-ANT)	P_{in}=8W, I_{bias}=50mA, RX port terminated 50Ω		0.8	1.2	dB
α_2	Insertion loss (ANT-RX)	P_{in}=1mW, I_{bias}=0, TX port terminated 50Ω		1.0	1.5	dB

TESTING CIRCUIT SCHEMATIC (ISO. α_1)



TYPICAL PERFORMANCE DATA





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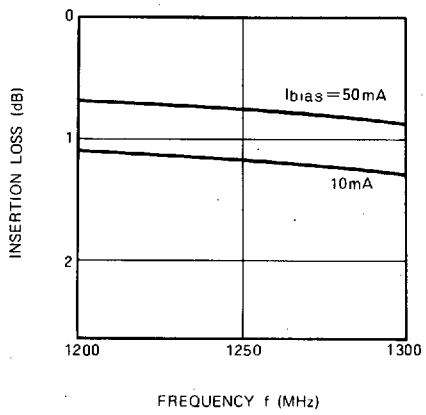
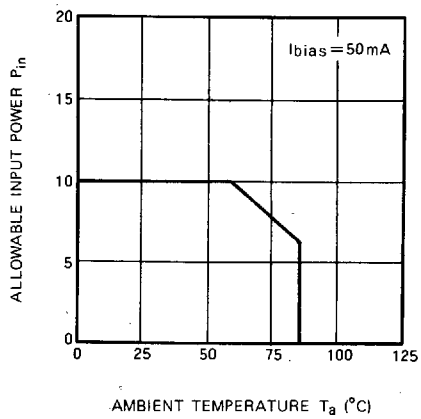
TX-ANT INSERTION LOSS VS. BIAS CURRENT



ALLOWABLE INPUT POWER



Recommended Practical Design

Fig. A shows a practical circuit pattern for mounting MD004.

This circuit pattern is 50Ω microstrip line with Epoxy-Glass printed circuit board.

- It's desirable that distance of each RF port is as far as possible.
- Each GND terminal ①, ③, ⑥ should be soldered at both side S, C ground plane.
- Each x point should be treated through hole or jumper.

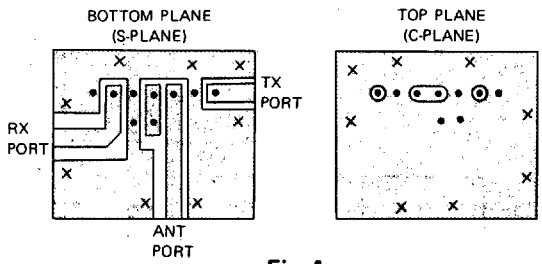


Fig A

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