

PIN Diode

MI407

Antenna Switch

50V / 1W

DATASHEET

OEM –Mitsubishi

Source: Mitsubishi Databook 1995

ANTENNA SWITCH
MI407
PIN DIODE
RF POWER SWITCHING

DESCRIPTION

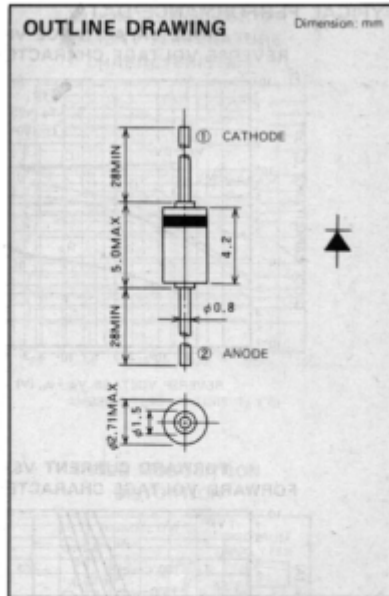
The MI407 PIN diode is employing a high reliability glass construction, designed for solid state antenna switches in commercial two-way radios.

FEATURES

- High power handling
- High zero bias impedance
- Low forward bias resistance
- Low insertion loss, High isolation
- Low distortion (TX: spurious < -80dBc, RX: inter-modulation -73dBc @90dBμ)

APPLICATION

High power antenna switch (25W output two-way radio)



ABSOLUTE MAXIMUM RATINGS (T_a = 25°C)

Symbol	Parameter	Rating	Unit
V _{RM}	Repetitive peak reverse voltage	50	V
V _R	Reverse voltage	50	V
I _{FSM} *	Forward surge current	2	A
P	Power dissipation	1	W
T _j	Junction temperature	175	°C
T _{stg}	Storage temperature	-55 to 175	°C

* : t = 5sec

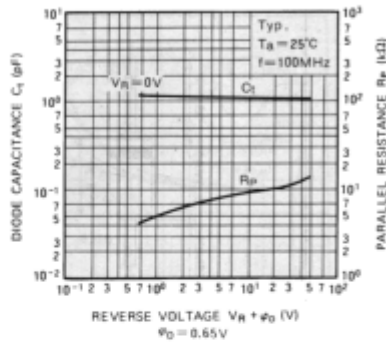
ELECTRICAL CHARACTERISTICS (T_a = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{R1}	Reverse current	V _R = 50 V			10	μA
I _{R2}	Reverse current	V _R = 45 V			0.5	μA
I _F	Forward current	V _F = 1.0V	100			mA
r _{fs}	Forward series resistance	I _F = 50 mA, f = 470MHz		0.5	0.7	Ω
C _i	Diode capacitance	V _R = 0V, f = 100MHz			1.8	pF
R _p	Parallel resistance	V _R = 0V, f = 100MHz	1.0	3.0		kΩ

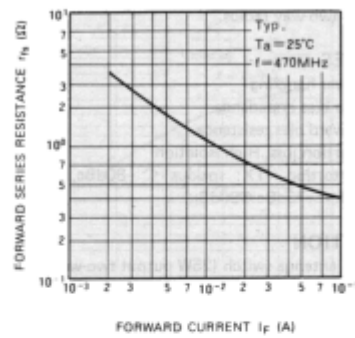
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TYPICAL PERFORMANCE DATA

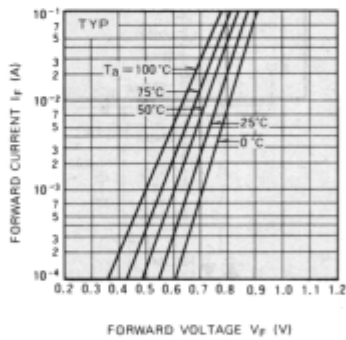
DIODE CAPACITANCE VS. REVERSE VOLTAGE CHARACTERISTICS



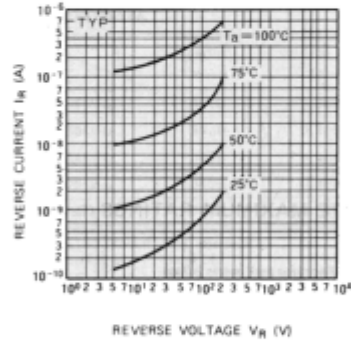
FORWARD SERIES RESISTANCE VS. FORWARD CURRENT CHARACTERISTICS



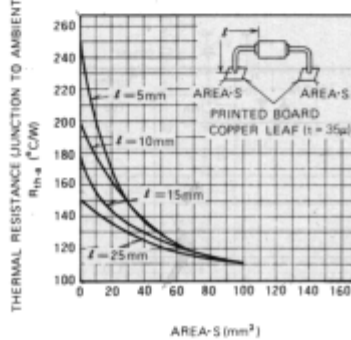
FORWARD CURRENT VS. FORWARD VOLTAGE CHARACTERISTICS



REVERSE CURRENT VS. REVERSE VOLTAGE CHARACTERISTICS

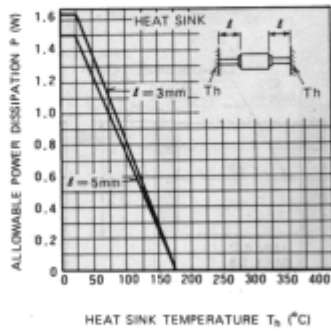


THERMAL RESISTANCE (JUNCTION TO AMBIENT) VS. AREA CHARACTERISTICS

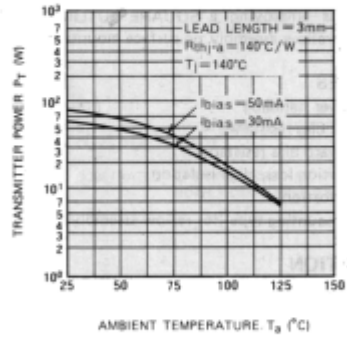


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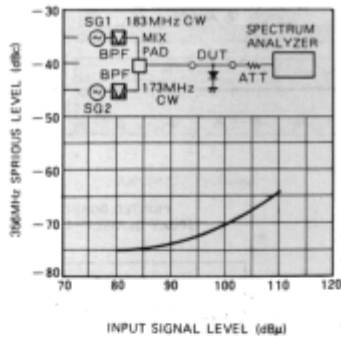
ALLOWABLE POWER DISSIPATION VS. HEAT SINK TEMPERATURE CHARACTERISTICS



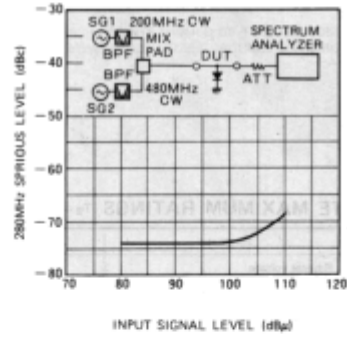
TRANSMITTER POWER VS. AMBIENT TEMPERATURE CHARACTERISTICS



INTER MODULATION DISTORTION



INTER MODULATION DISTORTION



INTER MODULATION DISTORTION

