ANTENNA SWITCH

MI308

PIN DIODE
RF POWER SWITCHING

DESCRIPTION

The MI308 PIN diode is employing a high reliability glass construction, designed for solid state antenna switchs in commercial two-way radios.

FEATURES

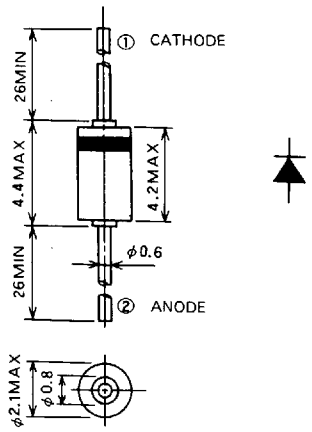
- High power handling
- High zero bias impedance
- Low forward bias resistance
- Low insertion loss, High isolation
- Low distortion (TX: sprious < −80dBc, RX: inter-modulation −73dBc @90dBμ)

APPLICATION

High power antenna switch (10W output two-way radio)

OUTLINE DRAWING

Dimension: mm



ABSOLUTE MAXIMUM RATINGS (Ta=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	500	mW
T_j	Junction temperature	175	°C
T_{stg}	Storage temperature	−55 to 175	°C

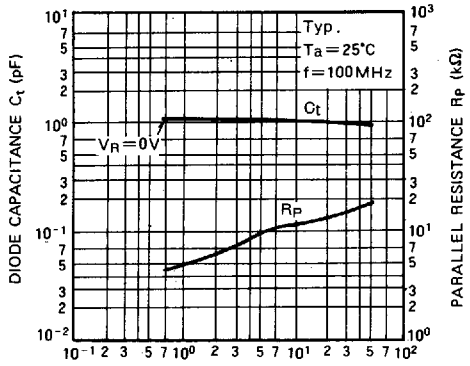
* : t=5sec

ELECTRICAL CHARACTERISTICS (Ta=25°C)

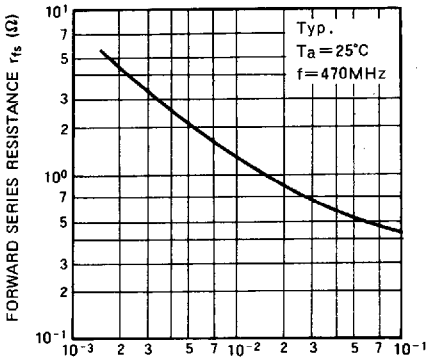
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{R1}	Reverse current	V_R=50V			10	μA
I_{R2}	Reverse current	V_R=45V			0.5	μA
I_F	Forward current	V_F=1.0V	100			mA
r_{fs}	Forward series resistance	I_F=50mA, f=470MHz		0.5	0.7	Ω
Ct	Diode capacitance	V_R=0V, f=100MHz			1.6	pF
R_P	Parallel resistance	V_R=0V, f=100MHz	1.0	3.0		kΩ

TYPICAL PERFORMANCE DATA

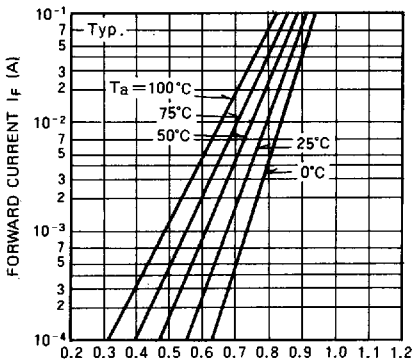
DIODE CAPACITANCE VS. REVERSE VOLTAGE CHARACTERISTICS



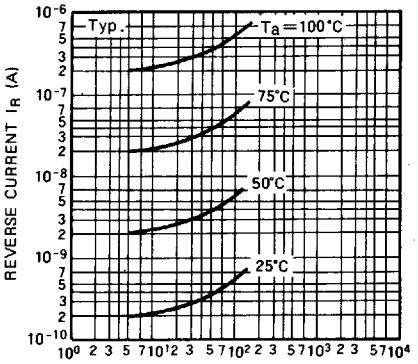
FORWARD SERIES RESISTANCE VS. FORWARD CURRENT CHARACTERISTICS



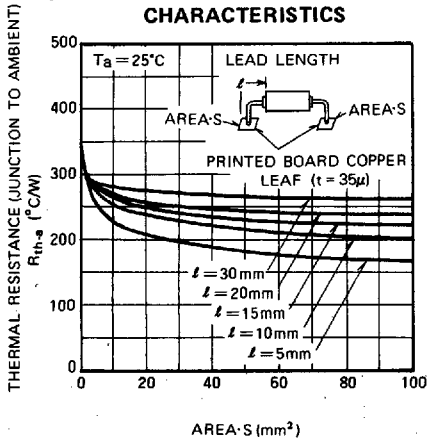
FORWARD CURRENT VS. FORWARD VOLTAGE CHARACTERISTICS



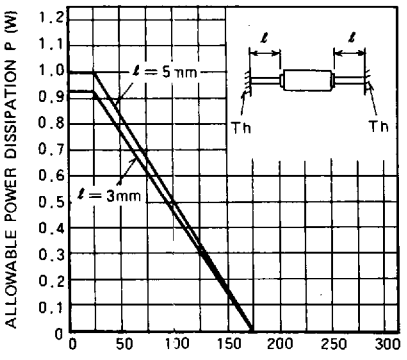
REVERSE CURRENT VS. REVERSE VOLTAGE CHARACTERISTICS



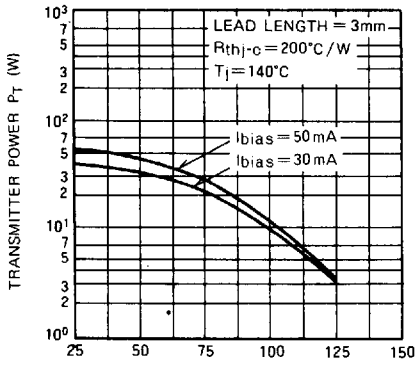
THERMAL RESISTANCE (JUNCTION TO AMBIENT) VS. AREA CHARACTERISTICS



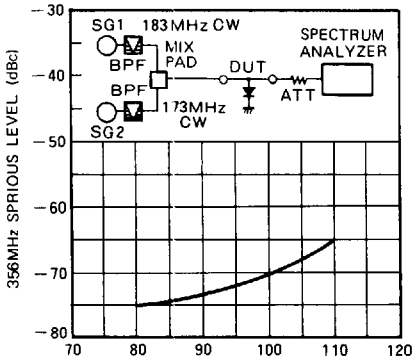
ALLOWABLE POWER DISSIPATION VS. HEAT SINK TEMPERATURE CHARACTERISTICS



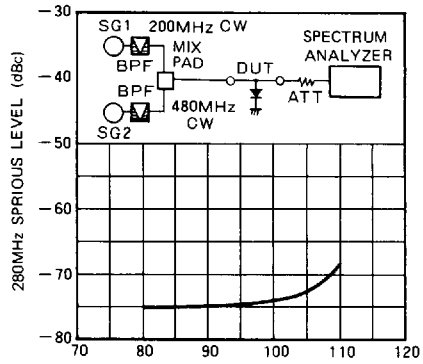
TRANSMITTER POWER VS. AMBIENT TEMPERATURE CHARACTERISTICS



INTER MODULATION DISTORTION



INTER MODULATION DISTORTION



INTER MODULATION DISTORTION