

DESCRIPTION

The MI402 PIN diode is employing a high reliability glass construction, designed for solid state antenna switches in commercial two-way radios.

FEATURES

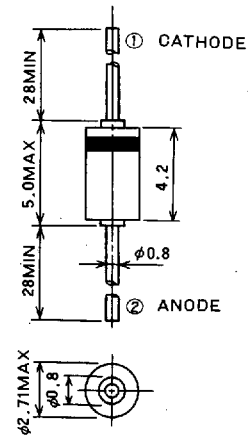
- High power handling
- Low insertion loss, High isolation

APPLICATION

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

OUTLINE DRAWING

Dimension: mm

**ABSOLUTE MAXIMUM RATINGS** ($T_a = 25^\circ\text{C}$)

Symbol	Parameter	Ratings	Unit
V_{RM}	Repetitive peak reverse voltage	270	V
I_{FSM} *	Forward surge current	2.0	A
P	Power dissipation	1.0	mW
T_j	Junction temperature	175	$^\circ\text{C}$
T_{stg}	Storage temperature	-55 to 175	$^\circ\text{C}$

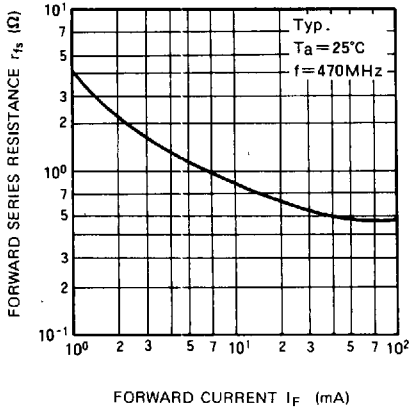
* : $t = 5\text{sec}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

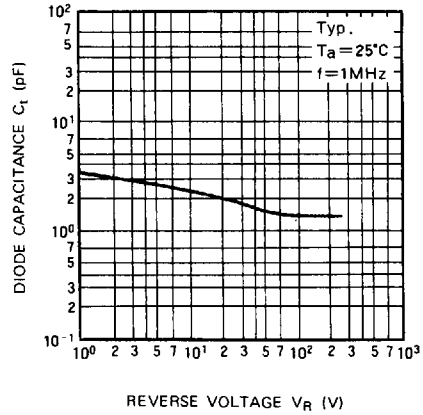
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{R1}	Reverse current	$V_R = 270\text{V}$			10.0	μA
I_{R2}	Reverse current	$V_R = 200\text{V}$			150	nA
I_F	Forward current	$V_F = 1.0\text{V}$	500			mA
C_t	Diode capacitance	$V_R = 12\text{V}$, $f = 1\text{MHz}$			3.0	pF
r_{fs}	Forward series resistance	$I_F = 50\text{mA}$, $f = 470\text{MHz}$			0.7	Ω
f_o	Cut-off frequency	$V_R = 12\text{V}$, $f = 50\text{MHz}$	1.0			GHz

TYPICAL PERFORMANCE DATA

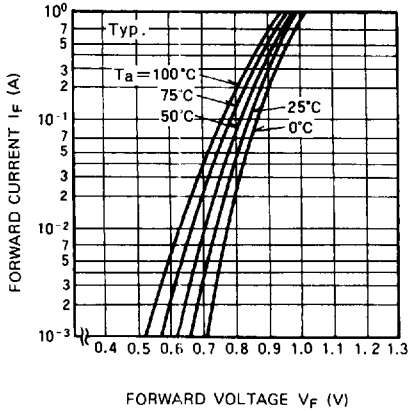
FORWARD SERIES RESISTANCE VS.
FORWARD CURRENT CHARACTERISTICS



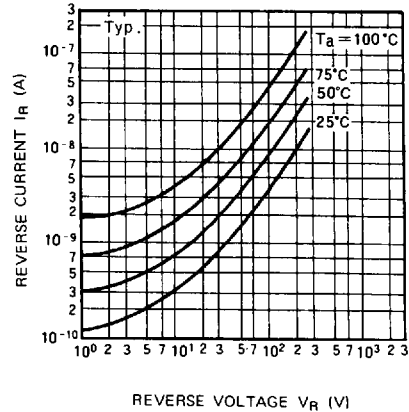
DIODE CAPACITANCE VS.
REVERSE VOLTAGE CHARACTERISTICS



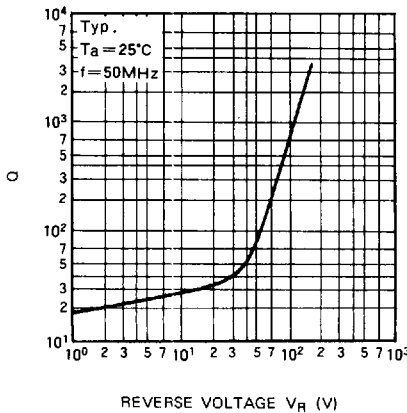
FORWARD CURRENT VS.
FORWARD VOLTAGE CHARACTERISTICS



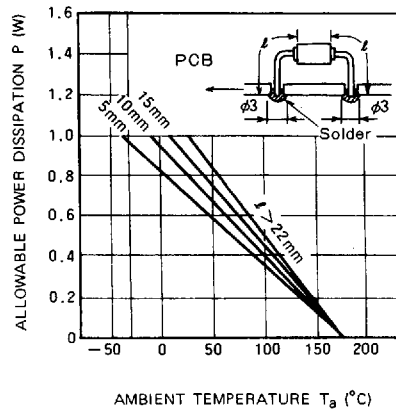
REVERSE CURRENT VS.
REVERSE VOLTAGE CHARACTERISTICS



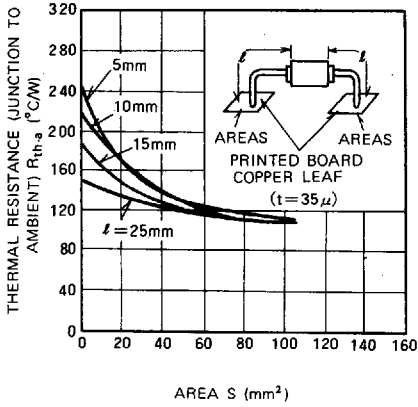
Q VS. REVERSE VOLTAGE
CHARACTERISTICS



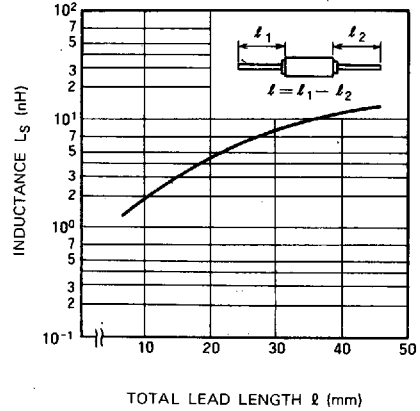
ALLOWABLE POWER DISSIPATION
VS. AMBIENT TEMPERATURE
CHARACTERISTICS



**THERMAL RESISTANCE
(JUNCTION TO AMBIENT) VS. AREA
CHARACTERISTICS**

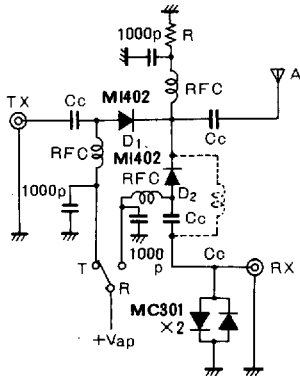


**INDUCTANCE VS. TOTAL
LEAD LENGTH CHARACTERISTICS**



APPLICATION

**SINGLE POLE DOUBLE THROW
SWITCHING CIRCUIT**

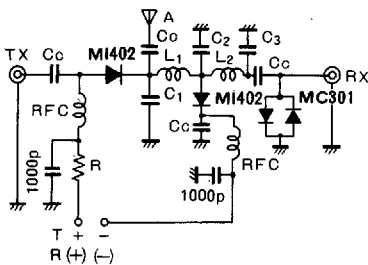


TYPICAL DATA

f	Isolation TX→RX	Insertion Loss TX→A
29MHz	40dB	0.3dB
50MHz	39dB	0.3dB
144MHz	39dB	0.3dB
220MHz	38dB	0.4dB
440MHz	36dB	0.5dB

HANDLING POWER 25W
BIAS CURRENT 50mA DC
SPRIOUS >80dB

**SINGLE POLE DOUBLE THROW
SWITCHING CIRCUIT (λ/4 TYPE)**



	C ₁	C ₂	C ₃	L ₁ , L ₂
50MHz	45pF	90pF	35pF	230nH
144MHz	15pF	22pF	4pF	75nH
220MHz	8pF	15pF	3pF	50nH
440MHz	2pF	5pF	2pF	25nH

TYPICAL DATA

f	Isolation TX→RX	Insertion Loss TX→A
50MHz	27dB	0.3dB
144MHz	33dB	0.3dB
220MHz	31dB	0.4dB
440MHz	24dB	0.5dB

HANDLING POWER 25W
BIAS CURRENT 50mA DC
SPRIOUS >80dB