

DESCRIPTION

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

FEATURES

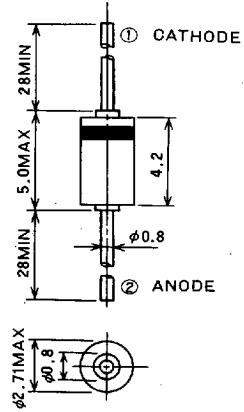
- High power handling
- Low insertion loss, High isolation

APPLICATION

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

OUTLINE DRAWING

Dimension: mm



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V _{RM}	Repetitive peak reverse voltage	270	V
I _F SM *	Forward surge current	2.0	A
P	Power dissipation	1.0	mW
T _j	Junction temperature	175	°C
T _{stg}	Storage temperature	-55 to 175	°C

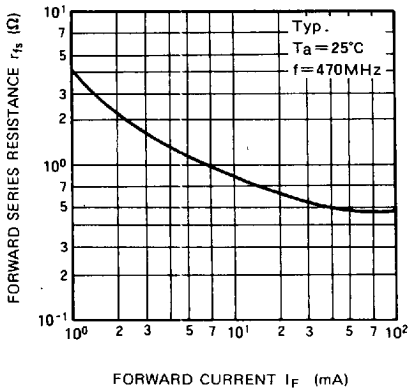
* : t=5sec

ELECTRICAL CHARACTERISTICS (Ta=25°C)

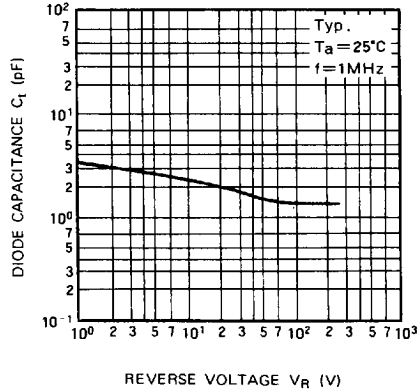
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I _{R1}	Reverse current	V _R =270V			10.0	μA
I _{R2}	Reverse current	V _R =200V			150	nA
I _F	Forward current	V _F =1.0V	500			mA
C _t	Diode capacitance	V _R =12V, f=1MHz			3.0	pF
r _{fs}	Forward series resistance	I _F =50mA, f=470MHz			0.7	Ω
f _c	Cut-off frequency	V _R =12V, f=50MHz	1.0			GHz

TYPICAL PERFORMANCE DATA

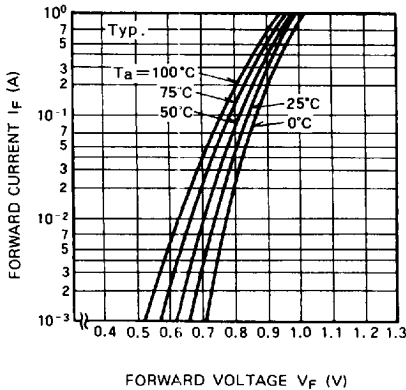
FORWARD SERIES RESISTANCE VS. FORWARD CURRENT CHARACTERISTICS



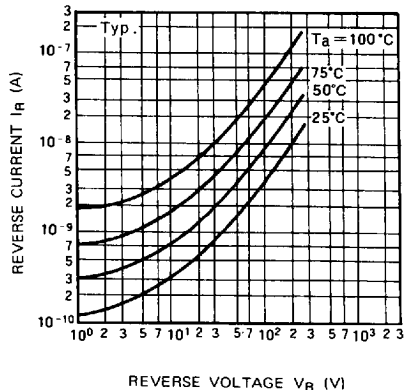
DIODE CAPACITANCE VS. REVERSE VOLTAGE CHARACTERISTICS



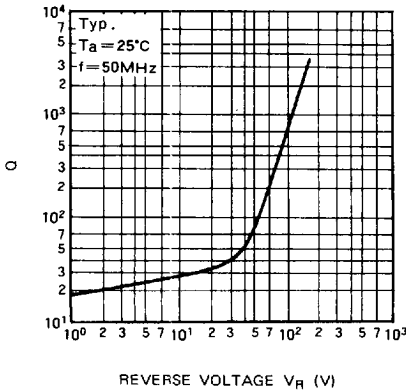
FORWARD CURRENT VS. FORWARD VOLTAGE CHARACTERISTICS



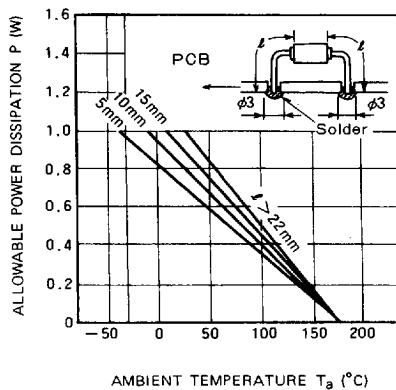
REVERSE CURRENT VS. REVERSE VOLTAGE CHARACTERISTICS



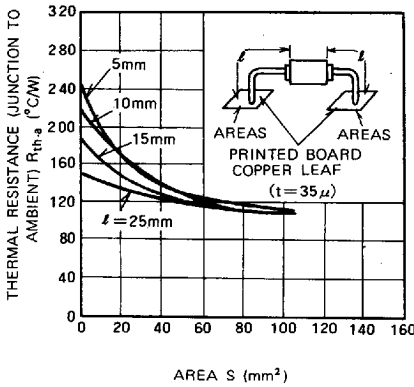
Q VS. REVERSE VOLTAGE CHARACTERISTICS



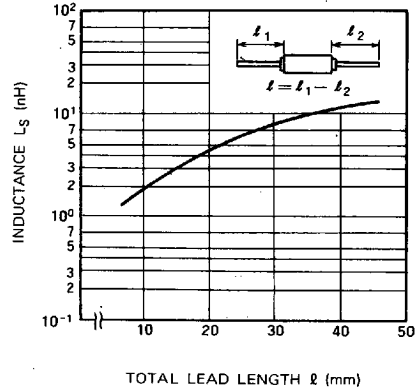
ALLOWABLE POWER DISSIPATION VS. AMBIENT TEMPERATURE CHARACTERISTICS



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

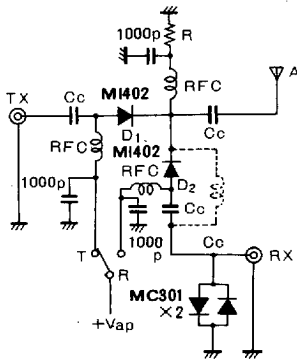


**INDUCTANCE VS. TOTAL
LEAD LENGTH CHARACTERISTICS**



APPLICATION

**SINGLE POLE DOUBLE THROW
SWITCHING CIRCUIT**

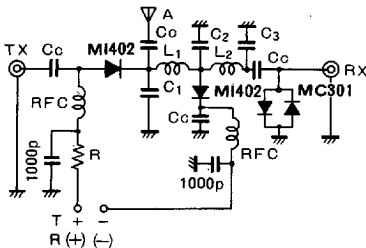


TYPICAL DATA

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

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

TYPICAL DATA

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

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