

MI301

PIN DIODE RF POWER SWITCHING

DESCRIPTION

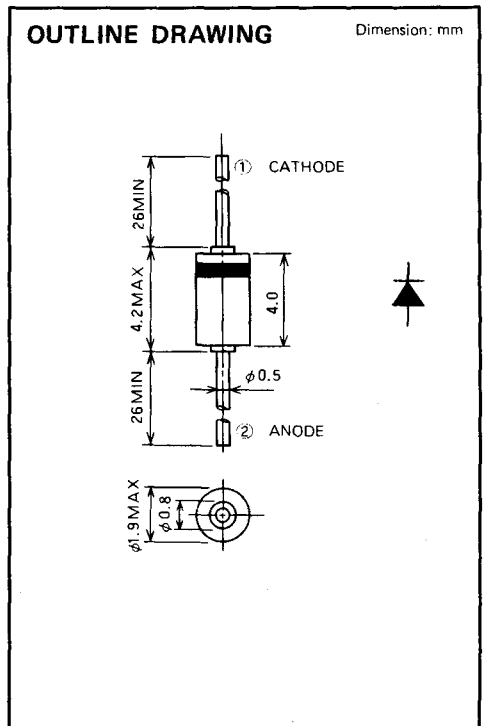
The MI301 PIN diode is employing high reliability glass construction, designed for solid state antenna switches in commercial two-way radios.

FEATURES

- Low insertion loss
- High isolation
- Small glass construction

APPLICATION

Antenna switching



ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V_{RM}	Repetitive peak reverse voltage	80	V
I_{FSM} *	Forward surge current	2.0	A
P	Power dissipation	350	mW
T_j	Junction temperature	175	°C
T_{stg}	Storage temperature	-55 ~ +175	°C

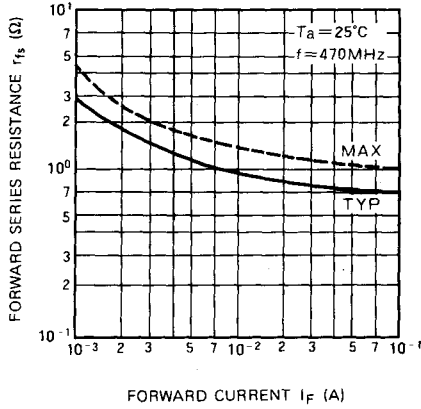
* : t=1sec

ELECTRICAL CHARACTERISTICS (Ta=25°C)

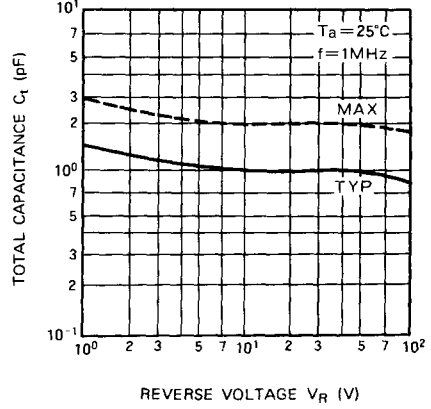
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_R	Reverse current	$V_R = 60V$			150	nA
$V_{(BR)R}$	Reverse break-down voltage	$I_R = 10 \mu A$	80			V
I_F	Forward current	$V_F = 1.0V$	100			mA
C_t	Diode capacitance	$V_R = 0V, f = 1MHz$			3.0	pF
r_{fs}	Forward series resistance	$I_F = 20mA, f = 470MHz$			1.2	Ω
Q	Q	$V_R = 0V, f = 50MHz$	20			—
L_S	Lead inductance	Total lead length 10mm		2.5		nH

TYPICAL PERFORMANCE DATA

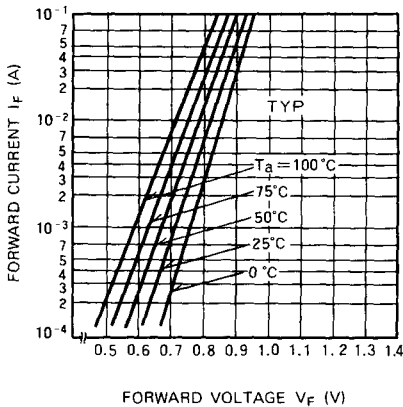
FORWARD SERIES RESISTANCE VS. FORWARD CURRENT CHARACTERISTICS



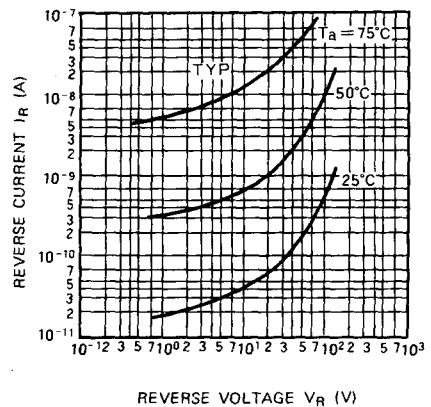
TOTAL CAPACITANCE VS. REVERSE VOLTAGE CHARACTERISTICS



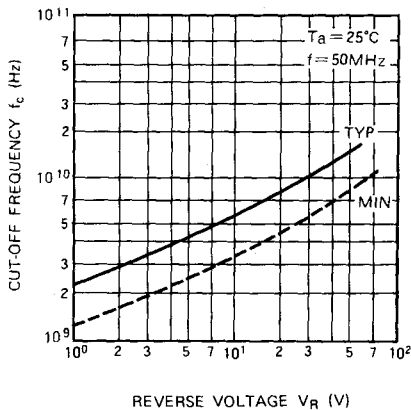
FORWARD CURRENT VS. FORWARD VOLTAGE CHARACTERISTICS



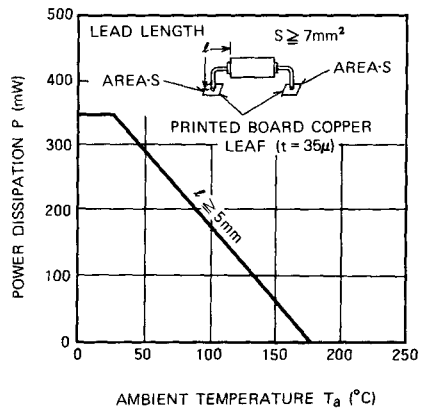
REVERSE CURRENT VS. REVERSE VOLTAGE CHARACTERISTICS



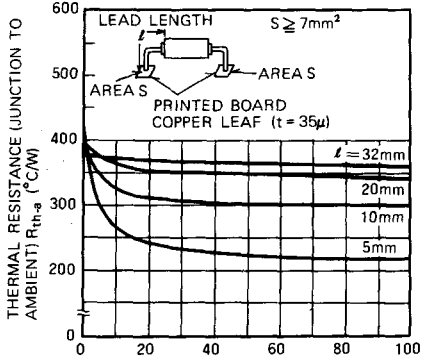
CUT-OFF FREQUENCY VS. REVERSE VOLTAGE CHARACTERISTICS



POWER DISSIPATION VS. AMBIENT TEMPERATURE CHARACTERISTICS

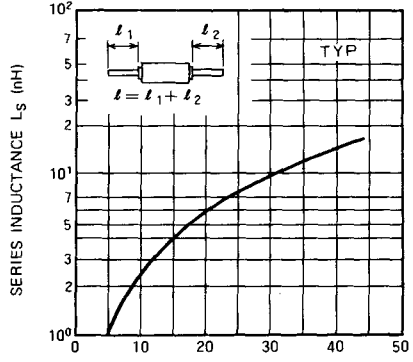


THERMAL RESISTANCE (JUNCTION TO AMBIENT) VS. PRINTED BOARD COPPER LEAF AREA CHARACTERISTICS



PRINTED BOARD COPPER LEAF AREA S (mm²)

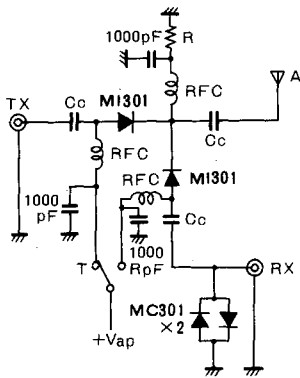
SERIES INDUCTANCE VS. TOTAL LEAD LENGTH CHARACTERISTICS



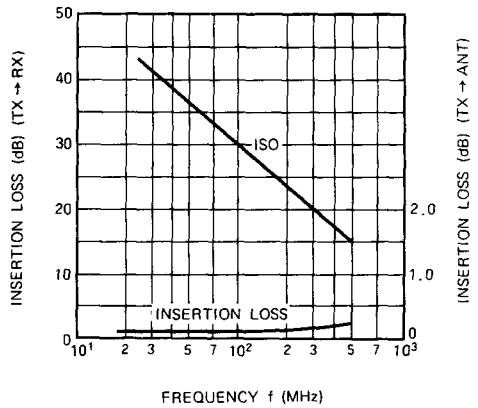
TOTAL LEAD LENGTH l (mm)

APPLICATION

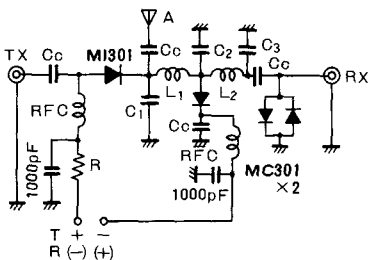
SINGLE POLE DOUBLE THROW SWITCHING CIRCUIT



SINGLE POLE DOUBLE THROW SWITCHING CHARACTERISTICS



SINGLE POLE DOUBLE THROW SWITCHING CIRCUIT ($\lambda/4$ TYPE)



	C ₁	C ₂	C ₃	L ₁ , L ₂
50MHz	45pF	90pF	35pF	230nH
144MHz	15pF	24pF	6pF	75nH
440MHz	3pF	7pF	2pF	25nH

SINGLE POLE DOUBLE THROW SWITCHING ($\lambda/4$ TYPE) CHARACTERISTICS

