星合电子
XINGHE ELECTRONICS

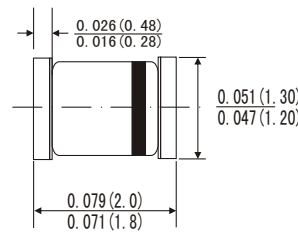
MCL4148

SMALL SIGNAL SWITCHING DIODE

FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- 500mW power dissipation
- This diode is also available in other case styles including: the DO-35 case with the type designation 1N4148, the MiniMelf case with the type designation LL4148, the SOD-123 case with the type designation 1N4148W, the SOD-323 case with the type designation 1N4148WS, the SOD-523 case with the type designation 1N4148WT.

MicroMelf



Dimensions in inches and (millimeters)

MECHANICAL DATA

- *Case*: MicroMELF glass case
- *Weight*: Approx. 0.03gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified)

	Symbol	Value	Units
DC Blocking Voltage	V_R	75	Volts
Non-Repetitive Peak Reverse Voltage	V_{RM}	100	Volts
Average rectified current, Half wave rectification with Resistive load at T_A=25°C and f ≥50Hz	I_{AV}	150	mA
Non-Repetitive Peack Forward Surge Current @t=1.0s	I_{FSM}	500	mA
Power dissipation at T_A=25°C	P_{tot}	500	mW
Junction temperature	T_J	175	°C
Storage temperature range	T_{STG}	-65 to +175	°C

ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified)

		Symbol	Min.	Typ.	Max	Units
Forward voltage	at IF=50mA	V_F			1	Volts
Leakage current	at V_R=20V	I_R			25	nA
	at V_R=75V	I_R			5	nA
	at V_R=20V , T_J=150°C	I_R			50	nA
Junction capacitance at V_R=V_F=0V		C_J			4	pF
Voltage rise when switching on tested with 50mA pulse t_P=0.1μs, Rise time<30μs, f_P=5 to 100kHz		V_{fr}			2.5	Volts
Reverse recovery time from I_F=10mA to I_R=1mA, V_R=6V, R_L=100Ω		t_{rr}			4	ns
Thermal resistance junction to ambient		$R_{\theta JA}$			500	K/W
Rectification efficiency at f=100MHz, V_{RF}=2V		η	0.45			

FIG 1-FORWARD CHARACTERISTICS

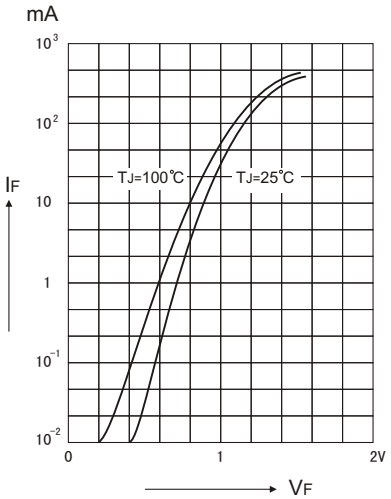


FIG 2: DYNAMIC FORWARD RESISTANCE VERSUS FORWARD CURRENT

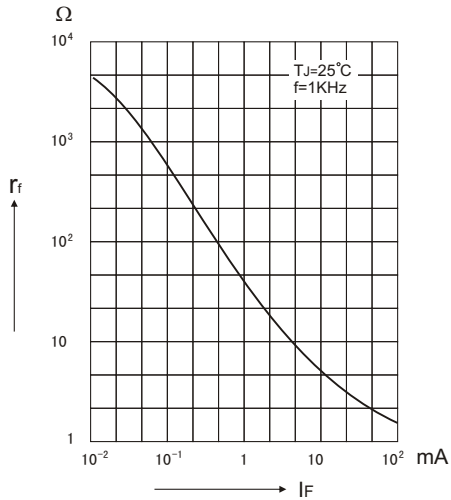


FIG 3-ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE

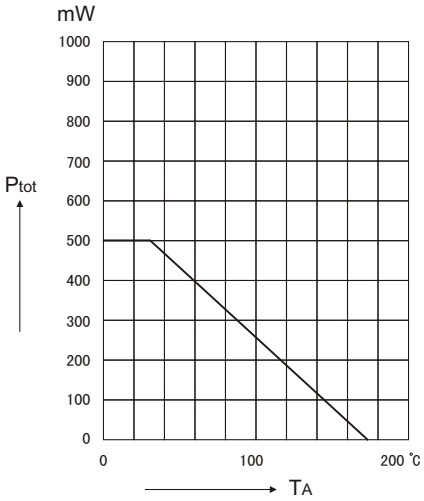


FIG. 4-RELATIVE CAPACITANCE VERSUS VOLTAGE

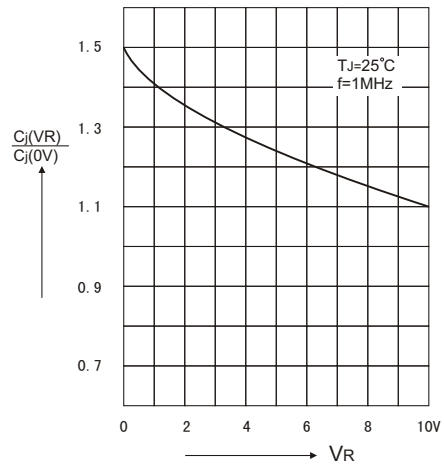


FIG.5 RECTIFICATION EFFICIENCY MEASUREMENT CIRCUIT

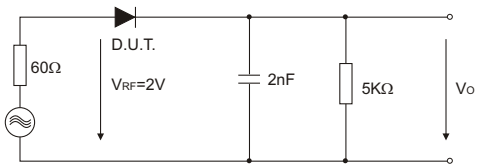


FIG 6: LEAKAGE CURRENT VERSUS JUNCTION TEMPERATURE

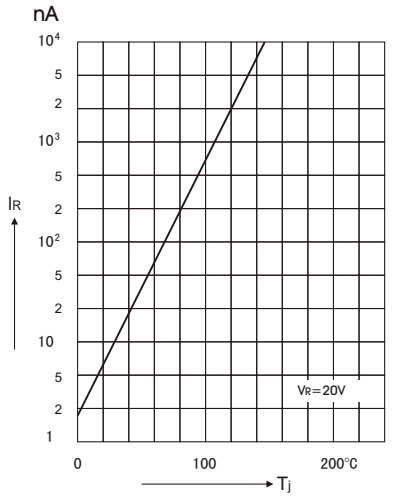


FIG 7: ADMISSIBLE REPETITIVE PEAK FORWARD CURRENT VERSUS PULSE DURATION