Switching Diode

Formosa MS

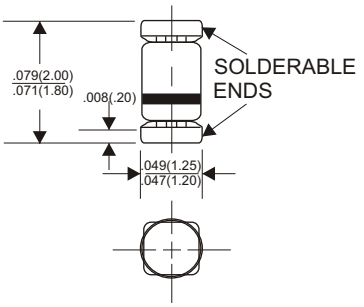
MCL4448

Silicon epitaxial planar type

Features

- Low power loss, high efficiency
- High reliability
- High speed (t_{rr} < 4 ns)

Micro-MELF



Dimensionsininchesand(millimeters)

Mechanical data

Case : Glass, Micro-MELF

Terminals : Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Indicated by cathode band

Mounting Position : Any

Weight : 0.05 gram

MAXIMUM RATINGS *(AT T_A=25°C unless otherwise noted)*

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Non-Repetitive peak reverse voltage		V_{RM}			100	V
Reverse voltage		V_R			75	V
Peak forward surge current	t_p= 1 us	I_{FSM}			0.5	A
Repetitive peak forward voltage		I_{FRM}			500	mA
Forward current		I_F			300	mA
Average forward current	V_R = 0	I_{FAV}			150	mA
Power dissipation		P_V			500	mW
Junction temperature		T_j			125	°C
Storage temperature		T_{STG}	-55		+125	°C

ELECTRICAL CHARACTERISTICS *(AT T_A=25°C unless otherwise noted)*

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	I_F = 5mA	V_F	0.62		0.72	V
	I_F = 10mA	V_F		0.86	1.00	V
Reverse current	V_R = 20V	I_R			25	nA
	V_R = 20V , T_j = 150 °C	I_R			50	uA
	V_R = 75V	I_R			5.0	uA
Breakdown current	I_R = 100uA , T_P/T = 0.01 T_P = 0.3ms	$V_{(BR)}$	100			V
Diode capacitance	V_R = 0 , f = 1MHz , V_{HF} = 50mV	C_D			4.0	pF
Rectification efficiency	V_{HF} = 2V , f = 100MHz	n_R	45			%
	I_F = I_R = 10mA , I_{RR} = 1mA	t_{rr}			8	ns
Reverse recovery time	I_F =10mA, V_R =6V, I_{RR} = 0.1 X I_R, R_L=100$_{OHM}$	t_{rr}			4	ns

RATING AND CHARACTERISTIC CURVES (MCL4448)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

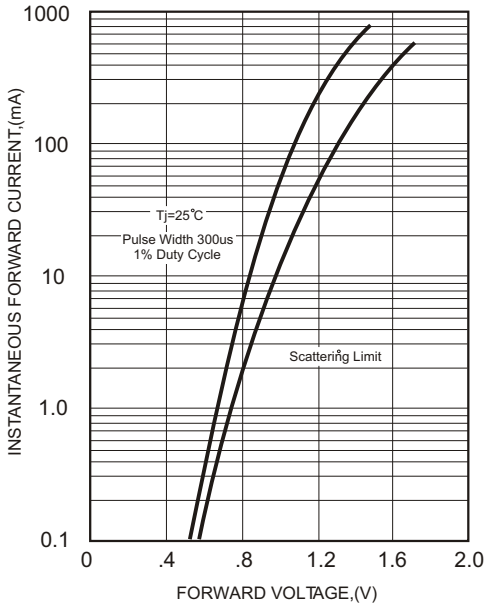


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

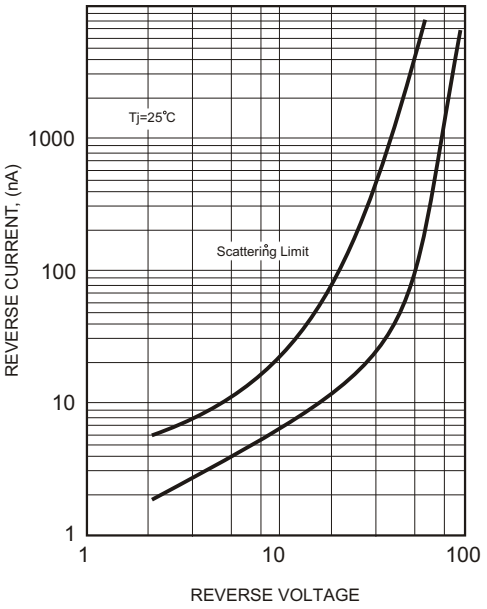


FIG.2 - TYPICAL DIODE CAPACITANCE

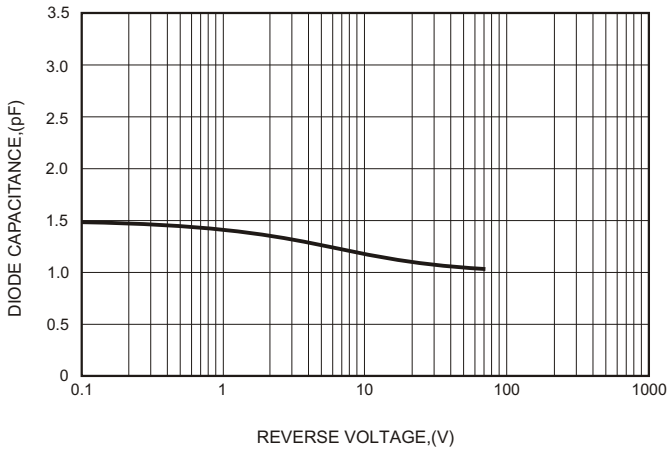


FIG.4 - REVERSE CURRENT VS JUNCTION TEMPERATURE