

High-speed switching diode



Features

1. Small surface mounting type
2. High reliability
3. High speed ($t_{rr} = 4 \text{ ns}$)

Applications

Extreme fast switches

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

$T_j = 25^\circ\text{C}$

Repetitive peak reverse voltage		V_{RRM}	100	V
Reverse voltage		V_R	75	V
Peak forward surge current	$t_p = 1 \mu\text{s}$	I_{FSM}	2	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	175	?
Storage temperature range		T_{stg}	-65~+175	?

Maximum Thermal Resistance

$T_j = 25^\circ\text{C}$

Junction ambient	on PC board 50mm × 50mm × 1.6mm	R_{thJA}	500	K/W
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Electrical Characteristics

T_j=25?

				Min	Typ	Max	Unit
Forward voltage	I _F =5mA	MM4148	V _F	0.62		0.72	V
	I _F =10mA	MM4148	V _F		0.86	1	V
	I _F =100mA	MM4448	V _F		0.93	1	V
Reverse current	V _R =20V		I _R			25	nA
	V _R =20V, T _j =150?		I _R			50	μ A
	V _R =75V		I _R			5	μ A
Breakdown current	I _R =100μ A, 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	pF
Rectification efficiency	V _{HF} =2V, f=100MHz		? _R	45			%
Reverse recovery time	I _F = I _R =10mA, i _R =1mA		t _{rr}			8	ns
	I _F =10mA, V _R =6V, i _R =0.1 × I _R , R _L =1000		t _{rr}			4	ns

Characteristics (T_j=25? unless otherwise specified)

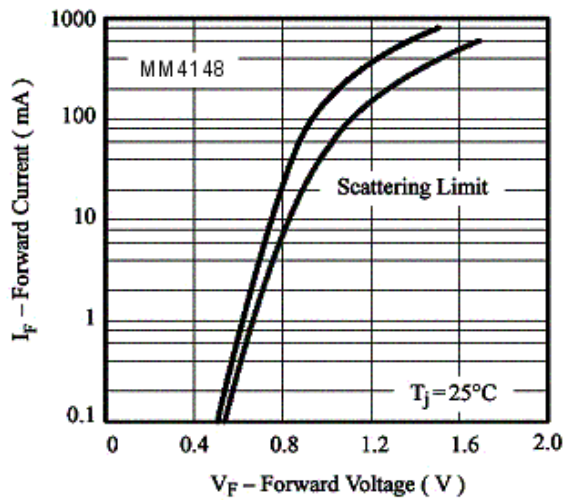


Figure 1. Forward Current vs. Forward Voltage

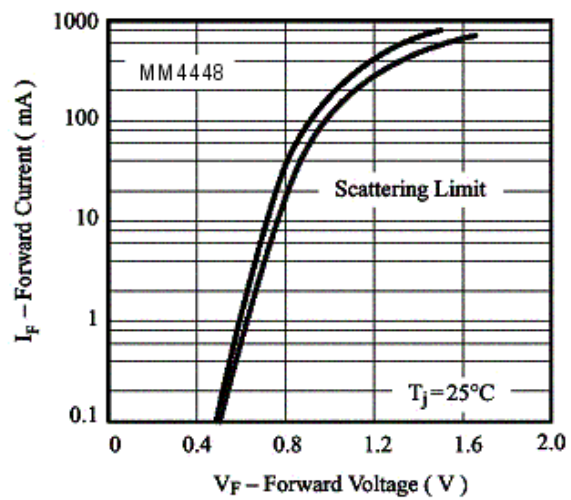


Figure 2. Forward Current vs. Forward Voltage

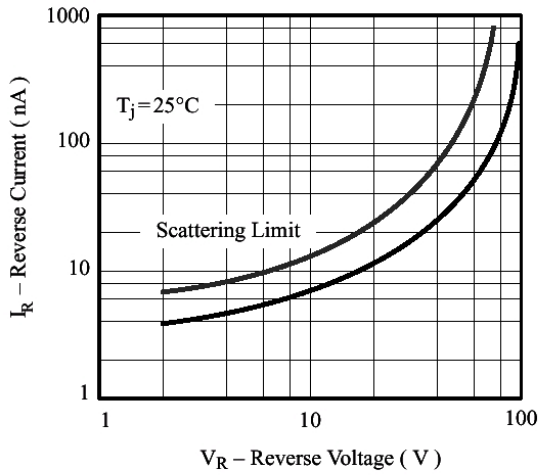


Figure 3. Reverse Current vs. Reverse Voltage

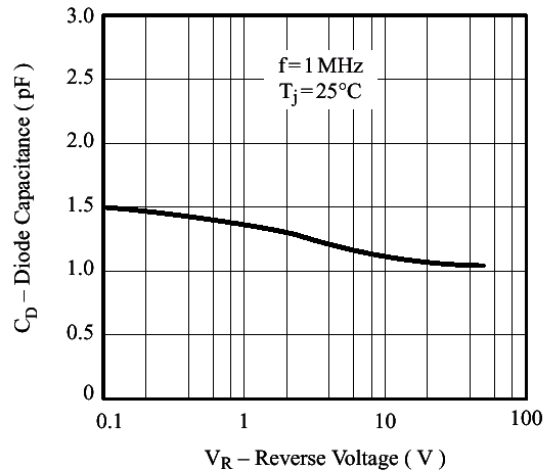
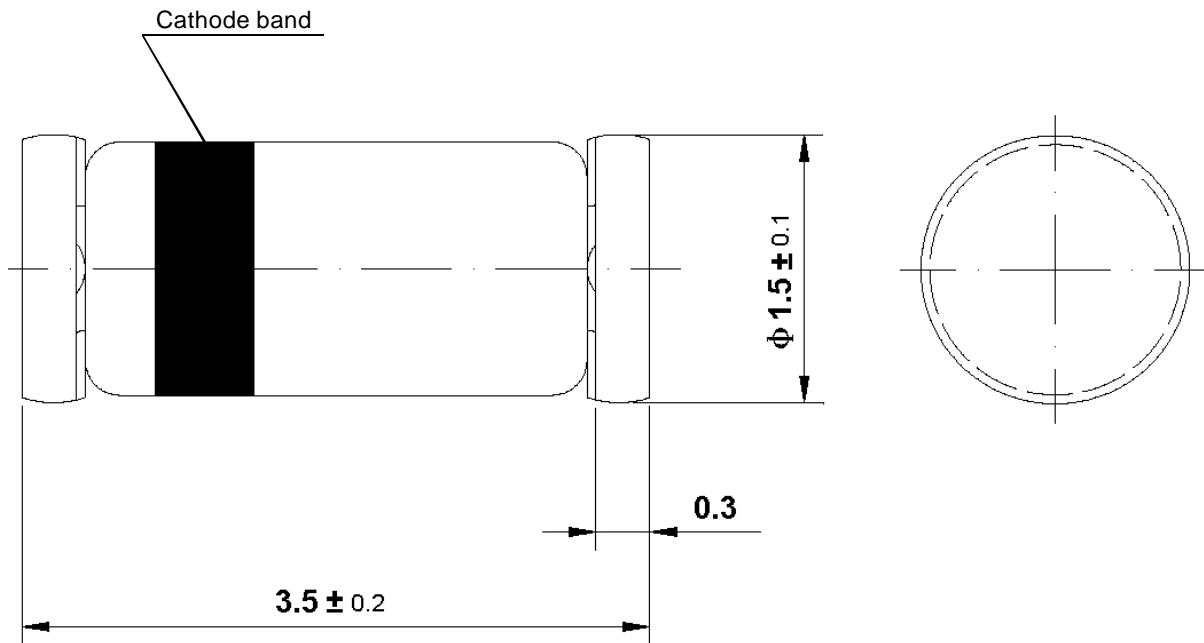


Figure 4. Diode Capacitance vs. Reverse Voltage

Dimensions in mm



Glass Case
 Mini Melf / SOD 80
 JEDEC DO 213 AA