Preliminary

TAIWAN SEMICONDUCTOR

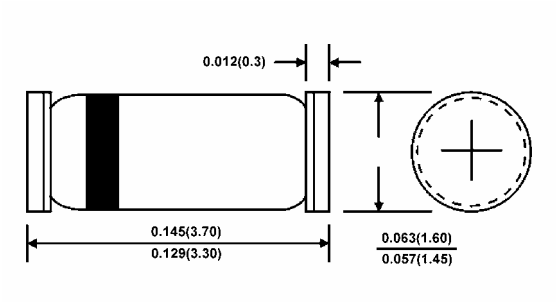
RoHS COMPLIANCE

LL4148L

500mW Hermetically Sealed Glass Fast Switching Diodes

SOD80C





Dimensions in inches and (millimeters)

Features

- ✧ Small hermetically sealed glass SMD package
- ✧ High switching speed: max. 4 ns
- ✧ Continuous reverse voltage: Max. 75V
- ✧ Repetitive peak reverse voltage: Max. 100V
- ✧ Repetitive peak forward current: Max. 450mA

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Repetitive Peak Reverse Voltage	V_{RRM}	100	V
Continuous Reverse Voltage	V_R	75	V
Continuous Forward Current Fig. 2, (Note 1)	I_F	200	mA
Repetitive Peak Forward Current	I_{FRM}	450	mA
Non-Repetitive Peak Forward Current Square wave: TJ=25°C Prior to surge: see Fig. 4 t=1us t=1ms t=1s	I_{FSM}	 4 1 0.5	A
Total Power Dissipation Tamb=25°C, (Note 1)	P_{tot}	500	mW
Operating Junction Temperature	T_J	200	°C
Storage Temperature Range	T_{STG}	-65 to + 200	°C

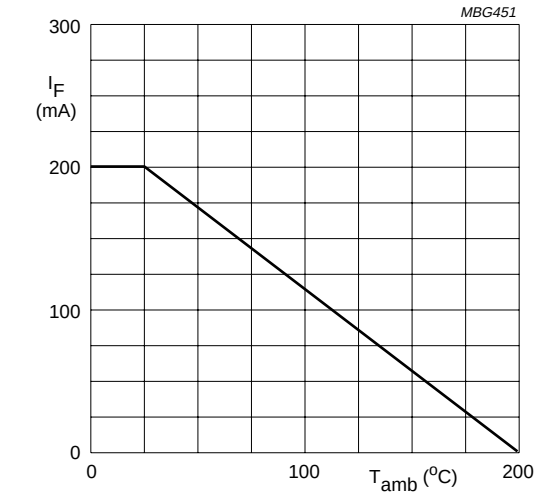
Electrical Characteristics

Type Number	Symbol	Min	Max	Units
Forward Voltage See Fig. 3 IF=5.0mA IF= 10mA IF =100mA	V_F	 0.62 - -	 0.72 1.0 1.0	V
Reverse Leakage Current VR=20V see Fig. 5 VR=20V Tj=150°C VR=20V Tj=100°C	I_R	- - -	25 50 3	nA uA uA
Junction Capacitance VR=0, f=1.0MHz	Cj	-	4.0	pF
Reverse Recovery Time (Note 2)	trr	-	4.0	nS
Forward Recovery Voltage IF=50mA, tr=20ns	Vfr	-	2.5	V

Notes: 1. Device Mounted on an FR4 printed-circuit board.

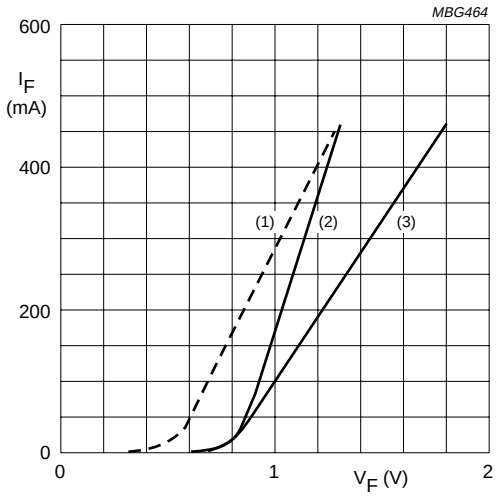
2. Reverse Recovery Test Conditions: I_F=10mA, I_R=60mA, R_L=100Ω, I_{RR}=1mA

RATINGS AND CHARACTERISTIC CURVES (LL4148L)



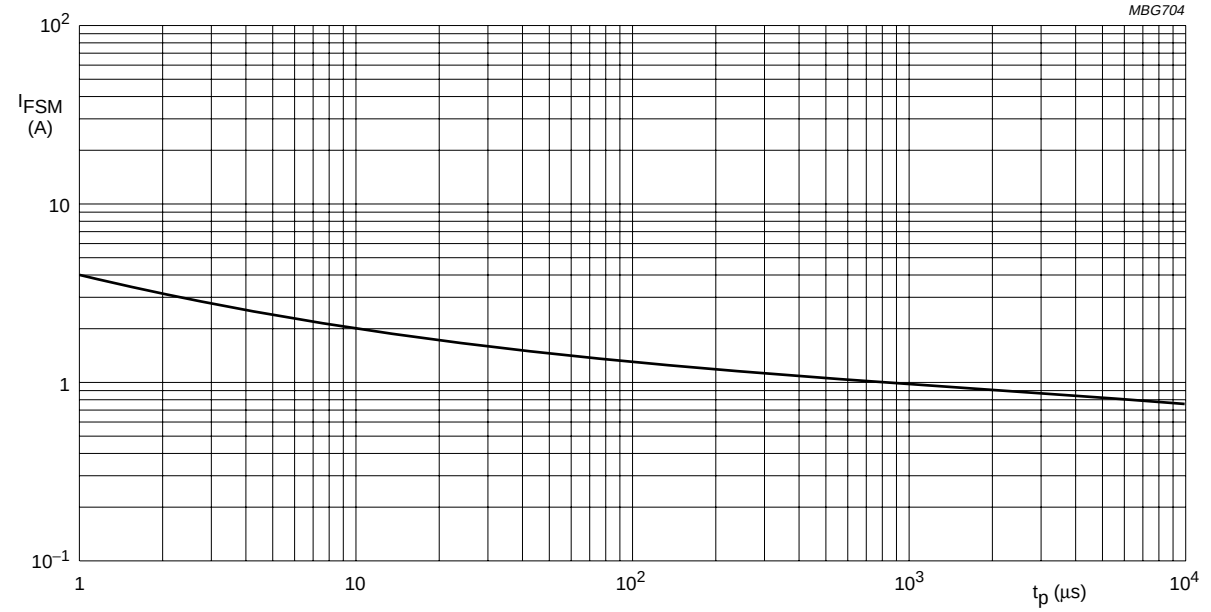
Device mounted on an FR4 printed-circuit board.

Fig.2 Maximum permissible continuous forward current as a function of ambient temperature.



(1) T_j = 175 °C; typical values.
(2) T_j = 25 °C; typical values.
(3) T_j = 25 °C; maximum values.

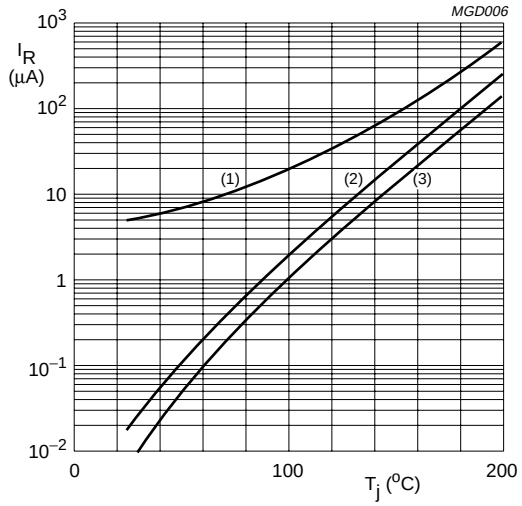
Fig.3 Forward current as a function of forward voltage.



Based on square wave currents.
T_j = 25 °C prior to surge.

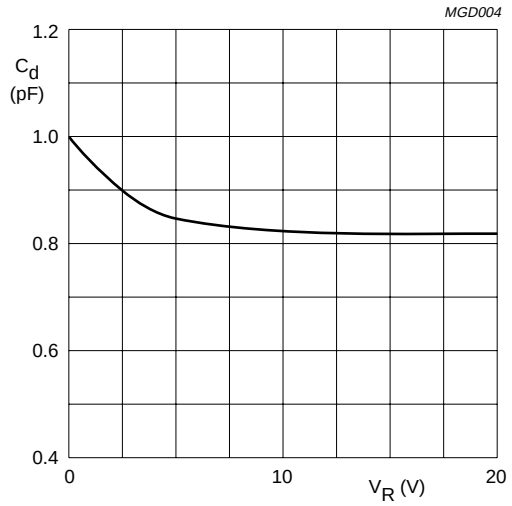
Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.

RATINGS AND CHARACTERISTIC CURVES (LL4148L)



(1) V_R = 75 V; maximum values.
(2) V_R = 75 V; typical values.
(3) V_R = 20 V; typical values.

Fig.5 Reverse current as a function of junction temperature.



f = 1 MHz; T_j = 25 °C.

Fig.6 Diode capacitance as a function of reverse voltage; typical values.