500 mW SOD27 Hermetically Sealed Glass Fast Switching Diodes

DEVICE MARKING DIAGRAM

PH1Nxxxx : Device Code

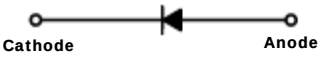


Fig.1 Simplifed outline and symbol

Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
P_D	Power Dissipation	500	mW
V_{RRM}	Repetitive Peak Reverse Voltage	100	V
V_R	Continuous Reverse Voltage	100	V
I_F	Continuous Forward Current(see Fig. 2)	200	mA
I_{FRM}	Repetitive Peak Forward Current	450	mA
T_{STG}	Storage Temperature Range	-65 to +200	°C
T_J	Operating Junction Temperature	+200	°C
I_{FSM}	Non-Repetitive Peak Forward Current Pulse Width : 1.0 μs (see Fig.4) 1.0 ms 1.0 s	 4 1 0.5	 A A A

Device mounted on an FR4 printed-circuit board; lead length 10 mm

Specification Features:

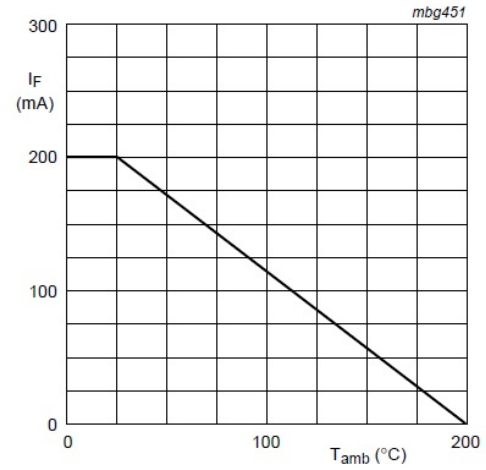
- Fast Switching Device (T_{RR} <4.0 nS)
- SOD27(DO-35) Package
- Through-Hole Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Leads Are Readily Solderable
- RoHS Compliant and Halogen Free
- Solder Hot Dip Tin (Sn) Terminal Finish
- Cathode Indicated By Polarity Band

Electrical Characteristics

T_A = 25°C unless otherwise noted

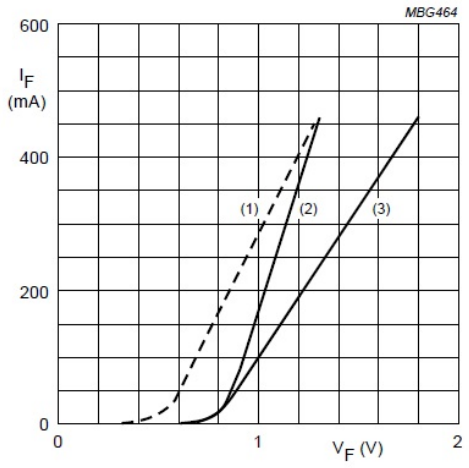
Symbol	Parameter		Test Condition	Limits Min	Limits Max	Unit
V_F	Forward Voltage	PH1N4148	I_F=10mA		1.0	
	(see Fig.3)	PH1N4448	I_F=5mA	0.62	0.72	V
		PH1N4448	I_F=100mA		1.0	
I_R	Reverse Current	PH1N4148/PH1N4448	V_R=20V		25	nA
	(see Fig.5)	PH1N4148/PH1N4448	V_R=20V,Tj=150℃		50	μA
		PH1N4448	V_R=20V,Tj=100℃		3	μA
C	Capacitance (see Fig.6)		V_R=0V, f=1M_{HZ}		4	pF
T_{RR}	Reverse Recovery Time (see Fig.7)		when switched from I_F=10mA to I_R=60mA;R_L=100Ω measured at I_R=1mA		4	ns
V_{fr}	Forward Recovery Voltage(see Fig.8)		when switched from I_F=50mA, T_r=20ns		2.5	V
$R_{th(j-tp)}$	Thermal Resistance Form Junction To Tie-Point		Lead Length 10mm		240	K/W
$R_{th(j-a)}$	Thermal Resistance Form Junction To Ambient		Lead Length 10mm		350	K/W

Typical Characteristics



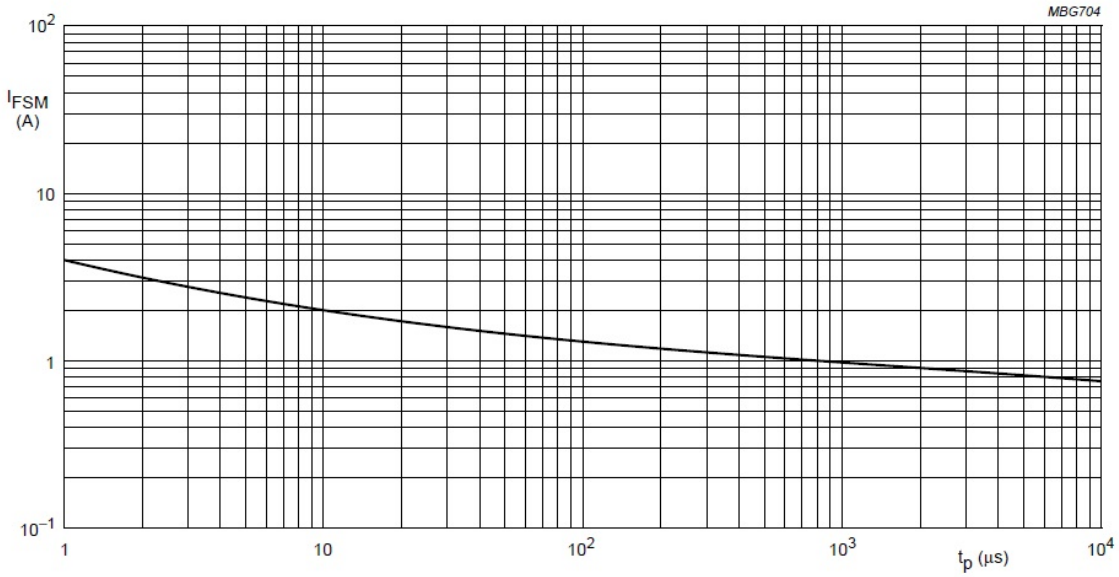
Device mounted on an FR4 printed-circuit board; lead length 10 mm.

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



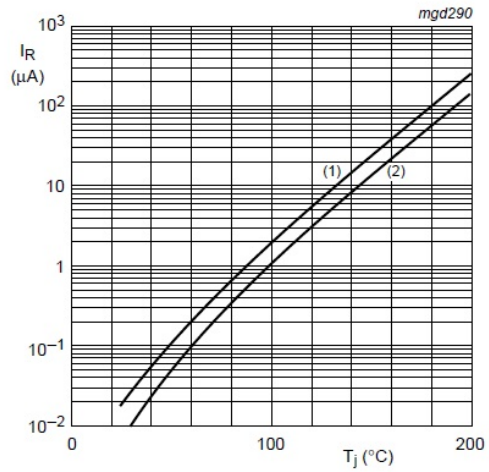
(1) T_j = 175 °C; typical values.
(2) T_j = 25 °C; typical values.
(3) T_j = 25 °C; maximum values.

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



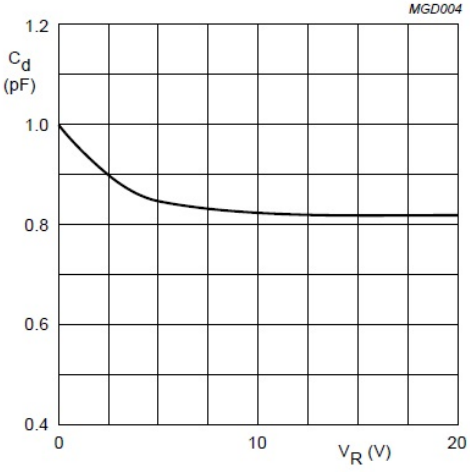
Based on square wave currents.
T_j = 25 °C prior to surge.

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



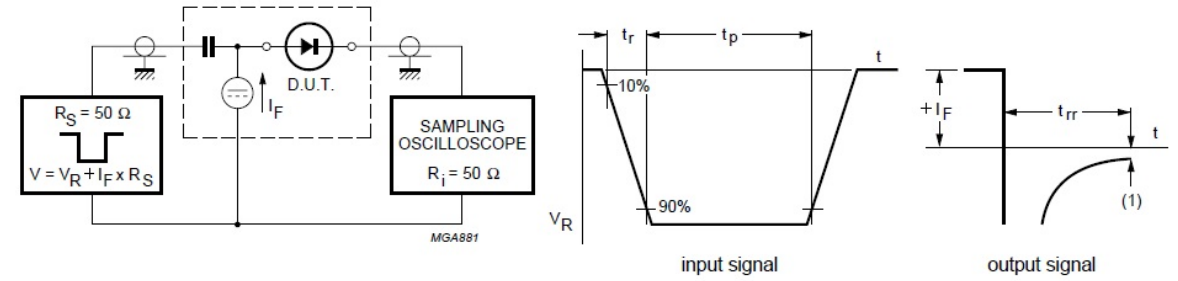
(1) V_R = 75 V; typical values.
(2) V_R = 20 V; typical values.

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.



(1) I_R = 1 mA.

Fig.7 Reverse recovery voltage test circuit and waveforms.

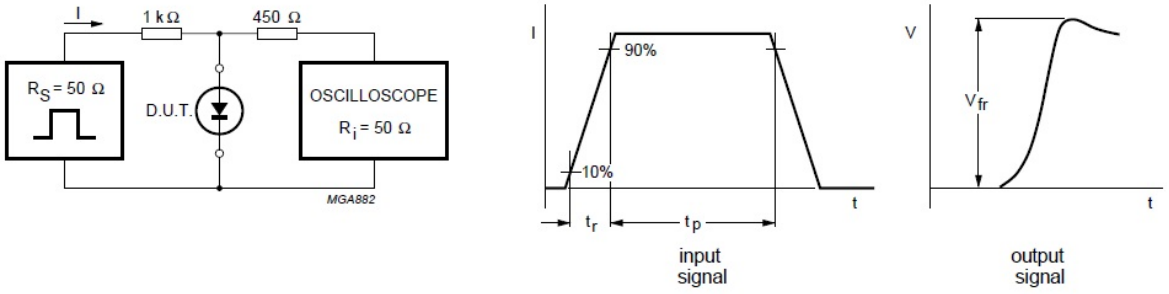
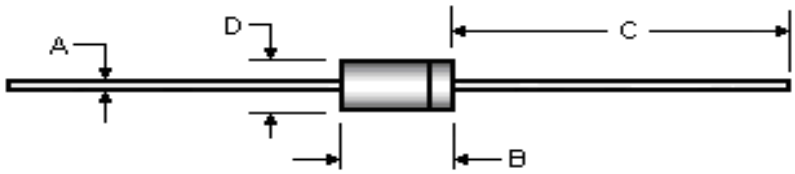


Fig.8 Forward recovery voltage test circuit and waveforms.

Package Outline

Package	Case Outline
DO-35	

DIM	SOD27(DO-35)			
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.46	0.56	0.018	0.022
B	3.05	4.25	0.120	0.167
C	25.40	38.10	1.000	1.500
D	1.53	1.85	0.060	0.073

Notes:

1. All dimensions are within JEDEC standard.
2. DO35 polarity denoted by cathode band.

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