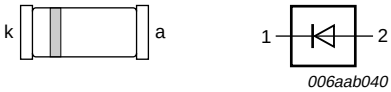
General description

Single high-speed switching diode, fabricated in planar technology, and encapsulated in a small hermetically sealed glass SOD80C Surface-Mounted Device (SMD) package.

Features

- High switching speed: $t_{rr} \leq 4$ ns
- Reverse voltage: $V_R \leq 75$ V
- Repetitive peak reverse voltage: $V_{RRM} \leq 100$ V
- Repetitive peak forward current: $I_{FRM} \leq 450$ mA
- Small hermetically sealed glass SMD package



Applications

- High-speed switching
- Reverse polarity protection

Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_F	forward current		[1]	-	-	200	mA
I_{FRM}	repetitive peak forward current			-	-	450	mA
V_R	reverse voltage			-	-	75	V
V_F	forward voltage	I_F = 100 mA		-	-	1000	mV
t_{rr}	reverse recovery time		[2]	-	-	4	ns

Limiting values

Symbol	Parameter	Conditions		Min	Max	Unit
V_{RRM}	repetitive peak reverse voltage			-	100	V
V_R	reverse voltage			-	75	V
I_F	forward current		[1]	-	200	mA
I_{FRM}	repetitive peak forward current			-	450	mA
I_{FSM}	non-repetitive peak forward current	square wave	[2]			
		t_p = 1 µs		-	4	A
		t_p = 1 ms		-	1	A
		t_p = 1 s		-	0.5	A
P_{tot}	total power dissipation	T_{amb} = 25 °C	[1]	-	500	mW

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Limiting values *…continued*

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions	Min	Max	Unit
T_j	junction temperature		-	200	°C
T_{amb}	ambient temperature		–65	+200	°C
T_{stg}	storage temperature		–65	+200	°C

Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	350	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point			-	-	300	K/W

Characteristics

T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_F	forward voltage	I_F = 5 mA	620	-	750	mV
		I_F = 100 mA	-	-	1000	mV
		I_F = 100 mA; T_j = 100 °C	-	-	930	mV
I_R	reverse current	V_R = 20 V	-	-	25	nA
		V_R = 75 V	-	-	5	µA
		V_R = 20 V; T_j = 150 °C	-	-	50	µA
		V_R = 75 V; T_j = 150 °C	-	-	100	µA
C_d	diode capacitance	V_R = 0 V; f = 1 MHz	-	-	2	pF
t_{rr}	reverse recovery time	[1]	-	-	4	ns
V_{FR}	forward recovery voltage	[2]	-	-	2.5	V

[1] When switched from I_F = 10 mA to I_R = 10 mA; R_L = 100 Ω; measured at I_R = 1 mA.

[2] When switched from I_F = 50 mA; t_r = 20 ns.

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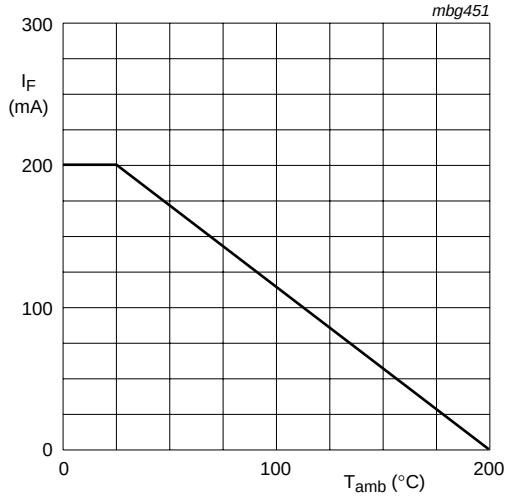
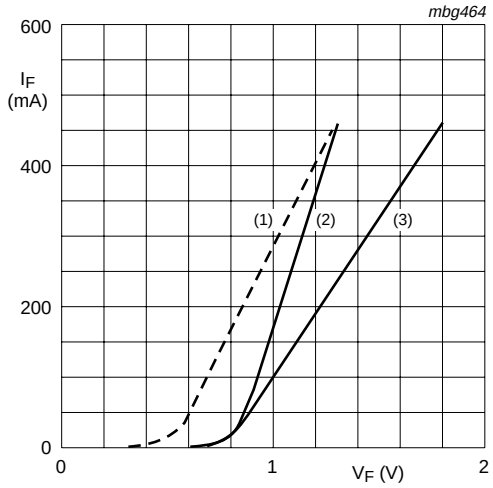
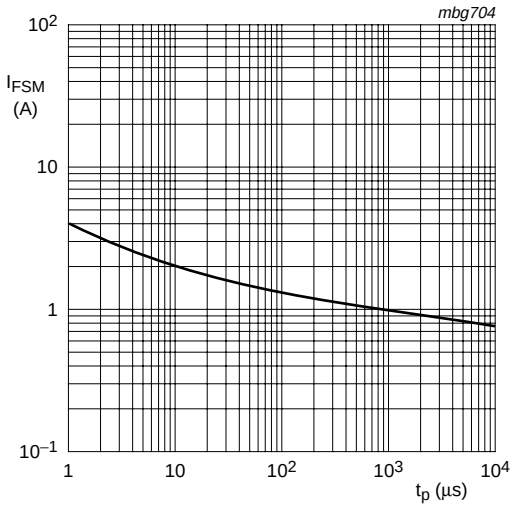


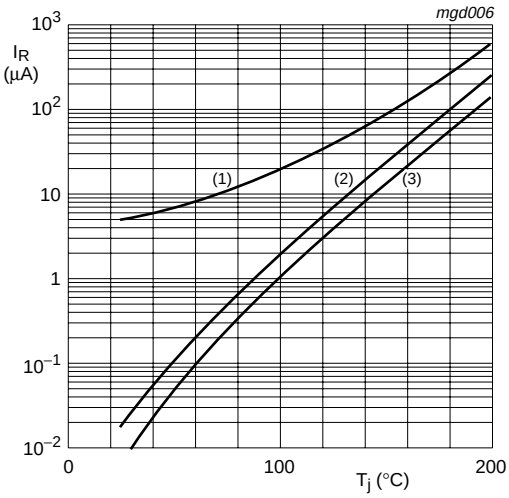
FR4 PCB, standard footprint



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



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



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