International **tern** Rectifier

SCHOTTKY DIODE

Characteristics	Value	J
I _{F(AV)} (DC)	0.5	
V _{RRM}	40	N
$I_{FSM} @ t_p = 10 \text{ ms sine}$	6.0	A
V _F @ 0.5Apk, T _J =100°C	0.42	V
T _J range	- 65 to 150	٥(

Major Ratings and Characteristics

eally suited for low voltage, high receive and polarity protection. Kage allows proper use in application ize is critical, fitting also the GSM and ment.

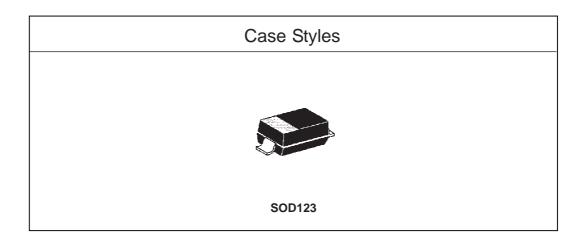
Amp

40V

mountable

low forward voltage drop xtremely fast switching Negligible switching losses Guard ring for enhanced ruggedness and long term reliability

Lead-Free ("PbF" suffix)



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Voltage Ratings

Part number	Value
V _R Max. DC Reverse Voltage (V)	10
V _{RWM} Max. Working Peak Reverse Voltage (V)	40

Absolute Maximum Ratings

	Parameters	Value	Units	Conditions		
I _F	Forward Current	0.5	A	DC, T _L = 122°C		
I _{FSM}	Max. Peak One Cycle Non-Repetitive	50	Α	5µs Sine or 3µs Rect. pulse	Following any rated load condition and	
	Surge Current, @ T _J =25°C	6.0	A	10ms Sine or 6ms Rect. pulse	with rated V _{RRM} applie	

Electrical Specifications

	Parameters	Value	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop (1)	0.480	V	@ 0.5A	$T_J = 25^{\circ}C$
		0.560	V	@ 1A	
$V_{\rm FM}$	Max. Forward Voltage Drop (1)	0.420	V	@ 0.5A	$T_{J} = 100^{\circ}C$
		0.520	V	@ 1A	
I _{RM}	Max. Reverse Leakage (1)	10	μA	V _R = 20V	$T_J = 25^{\circ}C$
	Current	5	mA	V _R = 20V	$T_J = 100^{\circ}C$
		20	μA	$V_R = 40V$	$T_J = 25^{\circ}C$
		13	mA	$V_R = 40V$	$T_J = 100^{\circ}C$
CT	Max. Junction Capacitance	60	pF	$V_R = 5V_{DC}$ (test signal range 100KHz to 1Mhz), $T_J = 25^{\circ}C$	
dv/dt	Max. Voltage Rate of Change	10000	V/µs		
	(Rated V _R)				

(1) Pulse Width < 300µs, Duty Cycle < 2%

Thermal-Mechanical Specifications

	Parameters	Value	Units	Conditions
Т	Max. Junction Temperature Range (*)	-65 to 150	°C	
T _{stg}	Max. Storage Temperature Range	- 65 to 150	°C	
R _{thJL}	Max. Thermal Resistance Junction to Lead	150	°C/W	Mounted on PC board FR4 with minimum pad size
R _{th(j-a}	Max. Thermal Resistance Junction	200	°C/W	1 inch square pad size (1 x 0.5 inch for each lead) on
	to Ambient			FR4 board
Wt	Approximate Weight	0.012	g	
	Case Style	SOD1	23	
	Device Marking	C <u>Y</u> WL	C	

 $\frac{(*)}{dTj} < \frac{1}{Rth(j-a)}$ thermal runaway condition for a diode on its own heatsink

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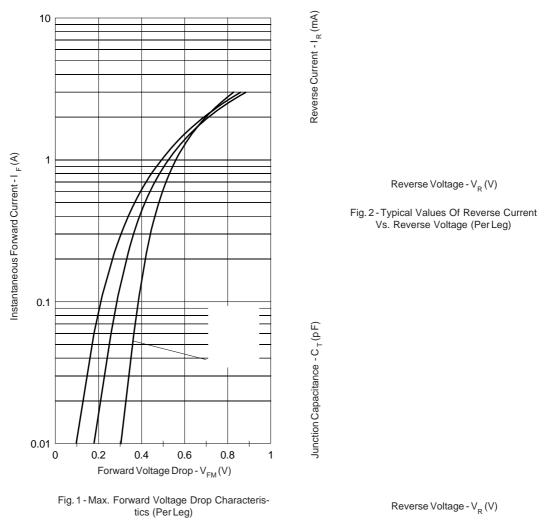
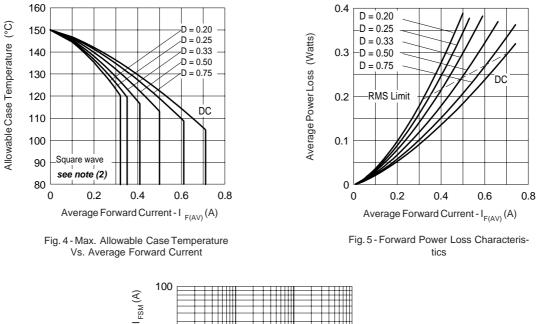


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

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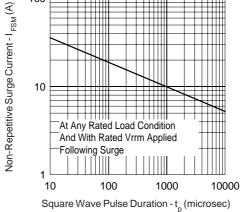
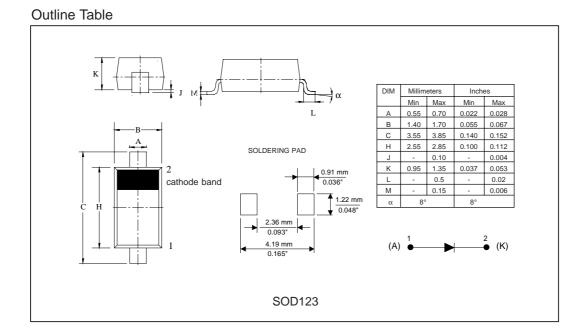


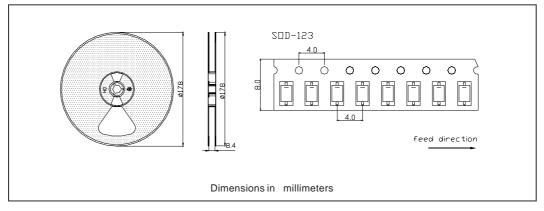
Fig. 6 - Max. Non-Repetitive Surge Current

(2) Formula used: $T_c = T_J - Pd \times R_{thJC}$; Pd=Forward Power Loss = $I_{F(AV)} \times V_{FM} @ (I_{F(AV)} / D)$ (see Fig. 4)

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Tape & Reel Information



Ordering Information Table

Device	Package	Marking	Base qty	Delivery mode
MBR0540	SOD-123	CYWLC	3000	Tape & Reel

Document Number: 94283

MBR0540PbF		International
Bulletin PD-21132 re	∋v. A 08/06	IFR Rectifier

Data and specifications subject to change without notice. This product has been designed and qualified for Industrial Level for Industrial Level. Qualification Standards can be found on IR's Web site.



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