

PL54B

SUPER LOW VF SCHOTTKY RECTIFIERS



<b>VOLTAGE:</b>	40 Volts	<b>CURRENT:</b>	5.0 Amperes	<b>SMB(DO-214AA)</b>	<b>Marking and Polarity</b>
-----------------	----------	-----------------	-------------	----------------------	-----------------------------

**FEATURES**

- Super Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

**MECHANICAL DATA**

- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant
- **Weight:** App. 0.095 grams (0.0034 ounce)

**TYPICAL APPLICATIONS**

- For use in high frequency inverters ,  
DC/DC converters, LED driver etc. applications

**Remark:**

- ①. PL54B=Module
- ②. NH=niuhang trademark
- ③. FF=Product line, According to actual changes;  
YWW=Periodic code, According to actual changes;
- ④. White band denotes cathode

**Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified.)**

Parameter	Symbol	PL54B	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	40	V
Maximum RMS voltage	$V_{RMS}$	28	V
Maximum DC blocking voltage	$V_{DC}$	40	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	5.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)(see fig.5)	$I_{FSM}$	120	A
Current Squared Time Per Diode( $t < 8.3ms$ )	$I^2t$	59.76	A <sup>2</sup> sec

**Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)**

Parameter	Test Conditions		Symbol	PL54B			Unit
				Min.	Typ.	Max.	
Maximum instantaneous forward voltage (see fig.2) (Note 1)	$T_A=25^\circ C$	$I_F= 5.0 A$	$V_F$	--	0.42	0.51	V
	$T_A=125^\circ C$			--	0.38	0.46	
Maximum instantaneous reverse current at rated DC blocking voltage (see fig.3)(Note 1)	$T_A=25^\circ C$	$V_R= V_{RRM}$	$I_R$	--	18	100	$\mu A$
	$T_A=125^\circ C$	$V_R= 80\% \cdot V_{RRM}$		--	1.0	10	mA
Typical junction capacitance(see fig.4)	4V, 1MHz		$C_J$	--	300	--	pF

**Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified )**

Parameter	Symbol	PL54B	Unit
Operating junction	$T_J$	-55 to 150	°C
Storage temperature range	$T_{STG}$	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	25	°C/W
	$R_{\theta JL}$	8	

Note: 1. Pulse width < 300  $\mu s$ , Duty cycle < 2%  
2. Mounted on P.C.B. with 0.3" x 0.3" (7.62 mm x 7.62 mm) copper pad areas

PL54B

SUPER LOW VF SCHOTTKY RECTIFIERS



RATING AND CHARACTERISTIC CURVES

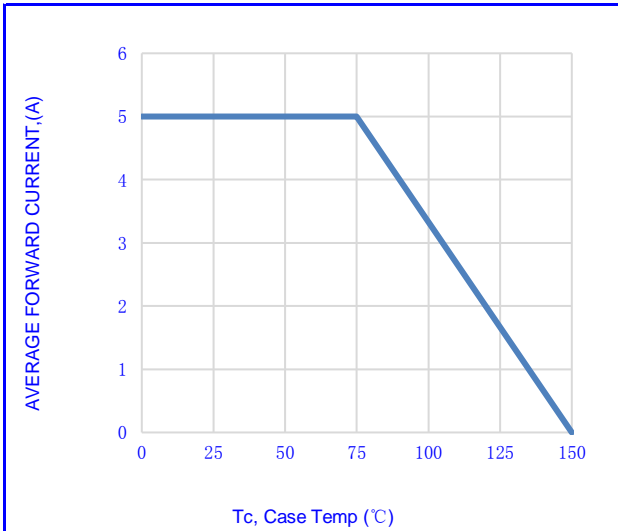


Fig.1- FORWARD CURRENT DERATING CURVE

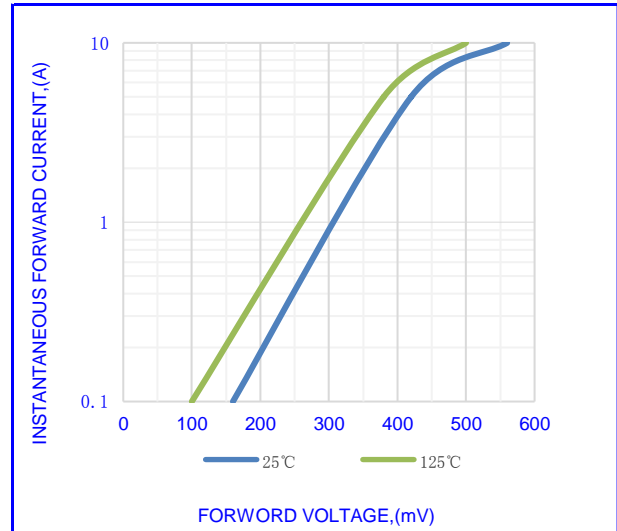


Fig.2-TYPICAL INSTANTANEOUS FORWARD

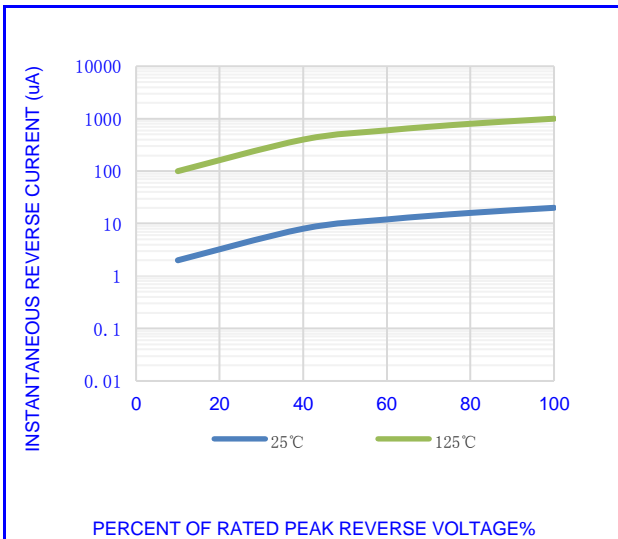


Fig.3-TYPICAL REVERSE CHARACTERISTICS

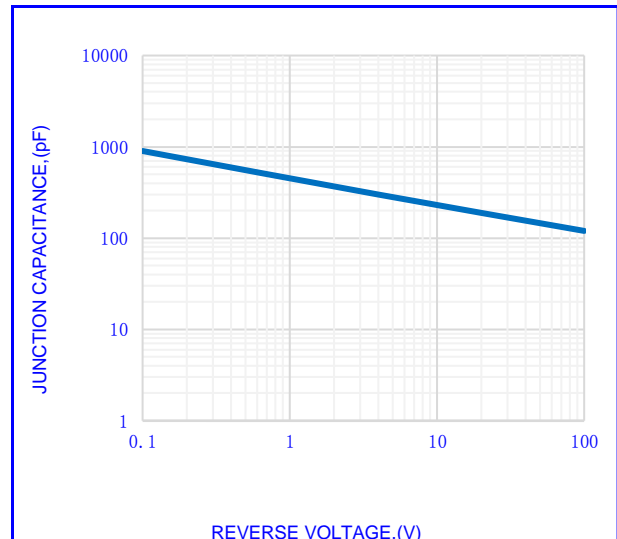


Fig.4- TYPICAL JUNCTION CAPACITANCE

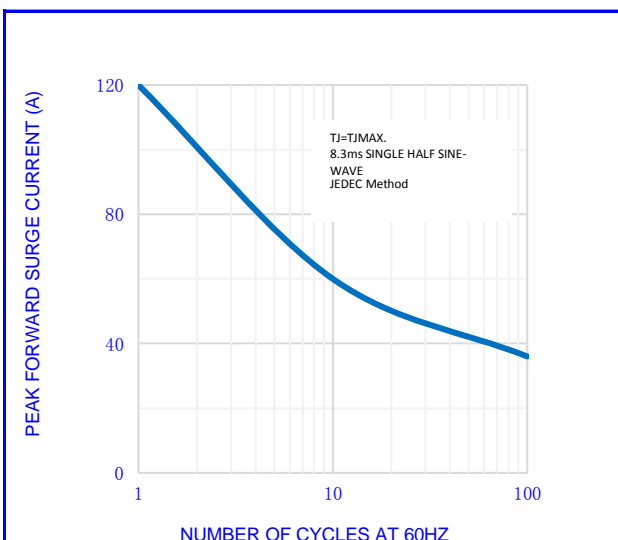


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

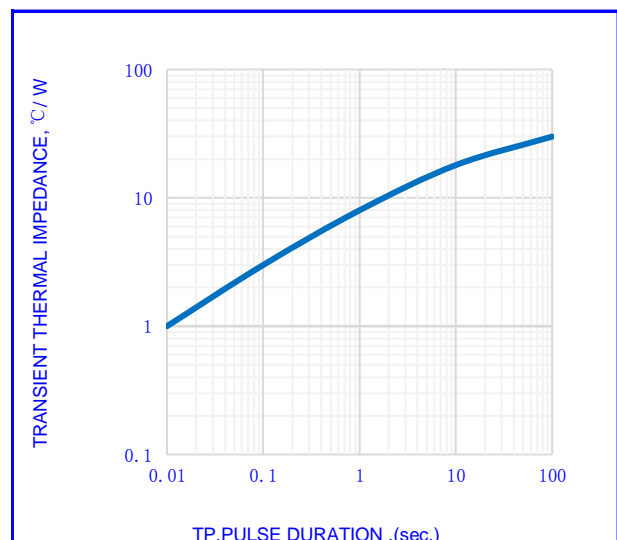


FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE

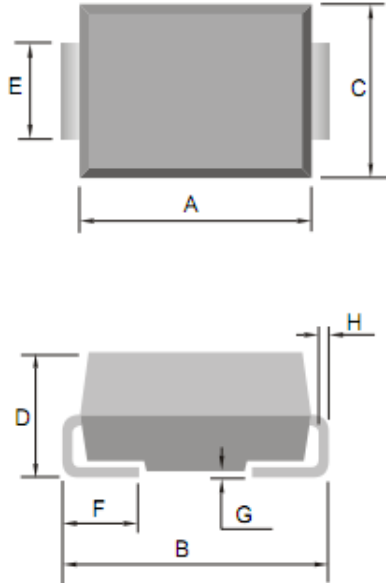
**PL54B**

**SUPER LOW VF SCHOTTKY RECTIFIERS**



**OUTLINE DRAWINGS**

**SMB(DO-214AA)**

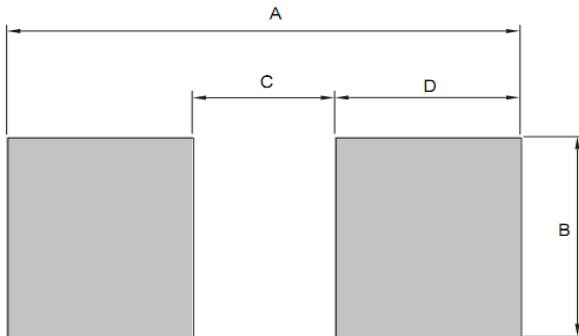


**OUTLINE DIMENSIONS**

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.060	-	4.700	0.15984	-	0.18504
B	5.080	-	5.590	0.2	-	0.22008
C	3.300	-	3.940	0.12992	-	0.15512
D	2.130	-	2.440	0.08386	-	0.09606
E	1.910	-	2.110	0.0752	-	0.08307
F	0.910	-	1.500	0.03583	-	0.05906
G	0.051	-	0.203	0.00201	-	0.00799
H	0.152	-	0.305	0.00598	-	0.01201

**RECOMMENDED LAYOUT DRAWINGS**

**SMB(DO-214AA)**



**RECOMMENDED MOUNTING PAD DIMENSIONS**

Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	6.340	-	-	0.24961	-
B	-	2.720	-	-	0.10709	-
C	-	1.760	-	-	0.06929	-
D	-	2.290	-	-	0.09016	-

**PACKING INFORMATION**

**SMB(DO-214AA)**

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ330	3000	340x340x45	6000	360x360x470	60000

**PL54B**

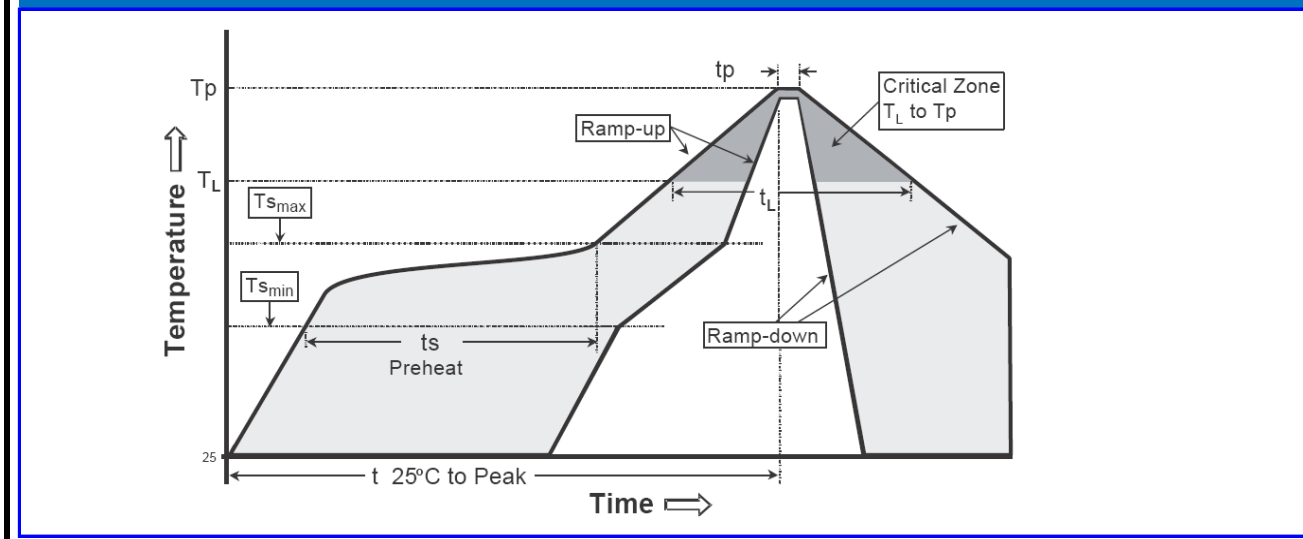
**SUPER LOW VF SCHOTTKY RECTIFIERS**



**Recommended wave soldering condition**

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

**Recommended temperature profile for IR reflow**



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(TS min) -Temperature Max(TS max) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (TL) - Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

PL54B

SUPER LOW VF SCHOTTKY RECTIFIERS



**Disclaimer**

- Reproducing and modifying information of the document is prohibited without permission from niuhang Electronics co., LTD
- Niuhan Electronics co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhan Electronics co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhan Electronics co., LTD. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Niuhan Electronics co., LTD. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Niuhan Electronics co., LTD. for any damages resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product the customer quality, change the internal structure and the production process Niuhan can not notify

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Schottky Diodes & Rectifiers](#) category:*

*Click to view products by [NH manufacturer](#):*

Other Similar products are found below :

[MA4E2039](#) [MMBD301M3T5G](#) [RB160M-50TR](#) [D83C](#) [BAS16E6433HTMA1](#) [BAS 3010S-02LRH E6327](#) [BAT 54-02LRH E6327](#)  
[NRVBAF360T3G](#) [NSR05F40QNXT5G](#) [NTE555](#) [JANS1N6640](#) [SS3003CH-TL-E](#) [GA01SHT18](#) [CRS10I30A\(TE85L,QM](#) [MBRA140TRPBF](#)  
[MBRB30H30CT-1G](#) [BAT 15-04R E6152](#) [JANTX1N5712-1](#) [DMJ3940-000](#) [SB007-03C-TB-E](#) [NRVBB20100CTT4G](#) [NRVBM120LT1G](#)  
[NTSB30U100CT-1G](#) [CRG04\(T5L,TEMQ\)](#) [ACDBA1100LR-HF](#) [ACDBA1200-HF](#) [ACDBA240-HF](#) [ACDBA3100-HF](#) [CDBQC0530L-HF](#)  
[ACDBA260LR-HF](#) [ACDBA1100-HF](#) [10BQ015-M3/5BT](#) [NRVBM120ET1G](#) [VSSB410S-M3/5BT](#) [1N5819T-G](#) [PDS1040Q-13](#) [B160BQ-13-F](#)  
[SDM05U20CSP-7](#) [BAS 70-07 E6433](#) [B140S1F-7](#) [HSM560Je3/TR13](#) [DDB2265-000](#) [ZHCS506QTA](#) [HSM190Je3/TR13](#) [B330AF-13](#)  
[ACDBUC0230-HF](#) [SDM1U100S1F-7](#) [MBR10200CTF-G1](#) [CDLL5712](#) [DMF2822-000](#)