



**THE DATASHEET OF  
SB140-A52**



# SB120-SB140(LS)

## SCHOTTKY BARRIER RECTIFIERS

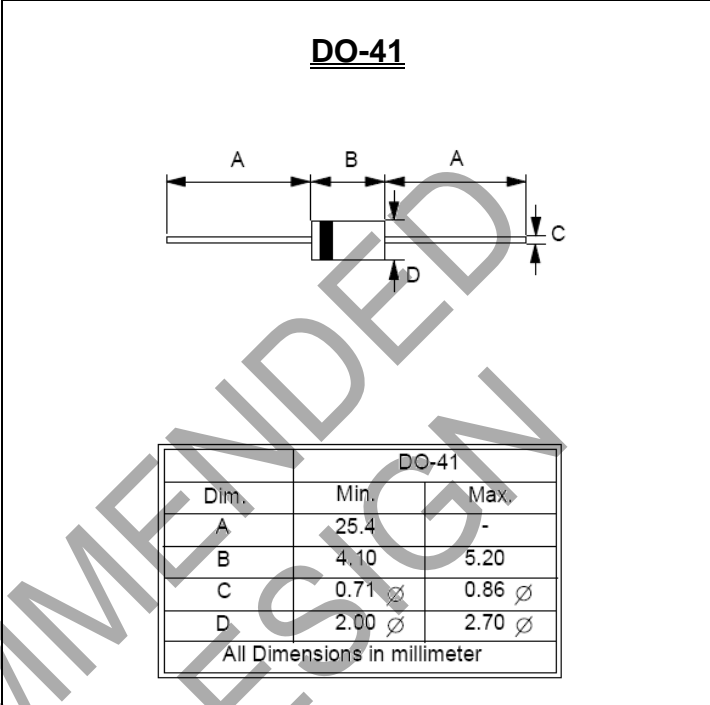
**REVERSE VOLTAGE - 20 to 40 Volts**  
**FORWARD CURRENT - 1.0 Amperes**

**FEATURES**

- Metal-semiconductor junction with guard ring
- Epitaxial construction
- Low forward voltage drop
- High current capability
- The plastic material carries UL recognition 94V-0
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection application
- IEC 61000-4-2, level 4 (ESD), > 15KV (air)
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**MECHANICAL DATA**

- Package: JEDEC DO-41 molded plastic
- Polarity: Color band denotes cathode
- Weight: 0.34 grams
- Mounting position: Any



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
Ratings at 25°C ambient temperature unless otherwise specified.

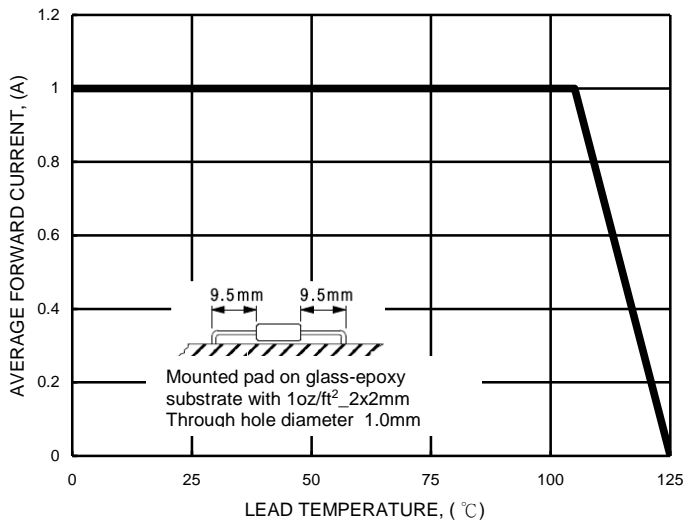
CHARACTERISTICS	SYMBOL	SB120	SB140	UNIT
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	20	40	V
Maximum RMS Voltage	$V_{RMS}$	14	28	V
Maximum DC Blocking Voltage	VDC	20	40	V
Maximum Average Forward Rectified Current 0.395" (9.5mm) Lead length @ $T_L=105^\circ\text{C}$	$I_{AV}$	1.0		A
Peak Forward Surge 8.3ms single half sine-wave super imposed on rated load	$I_{FSM}$	40		A
Maximum forward Voltage at 1.0A DC	$V_F$	0.5		V
Maximum DC Reverse Current @ $T_j=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_j=100^\circ\text{C}$	$I_R$	0.1 10		mA
Typical Junction Capacitance (Note 4)	$C_T$	50		pF
Typical Thermal Resistance (Note 5)	$R_{\theta JL}$	35		$^\circ\text{C/W}$
Operating Temperature Range	$T_j$	-55 to +125		$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150		$^\circ\text{C}$

**Notes:**

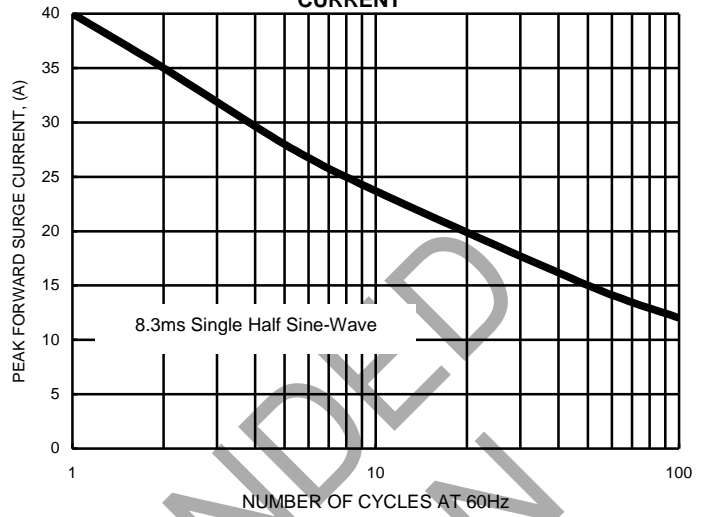
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
5. Thermal Resistance Junction to Lead.

**RATING AND CHARACTERISTIC CURVES**  
**SB120-SB140**

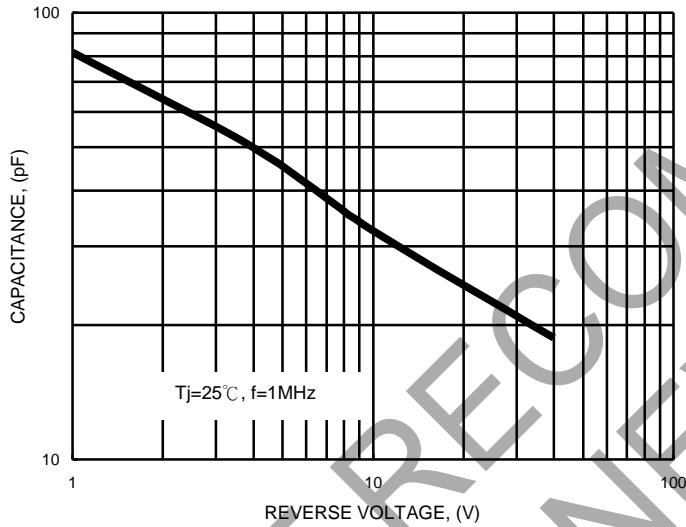
**FIG.1- FORWARD CURRENT DERATING CURVE**



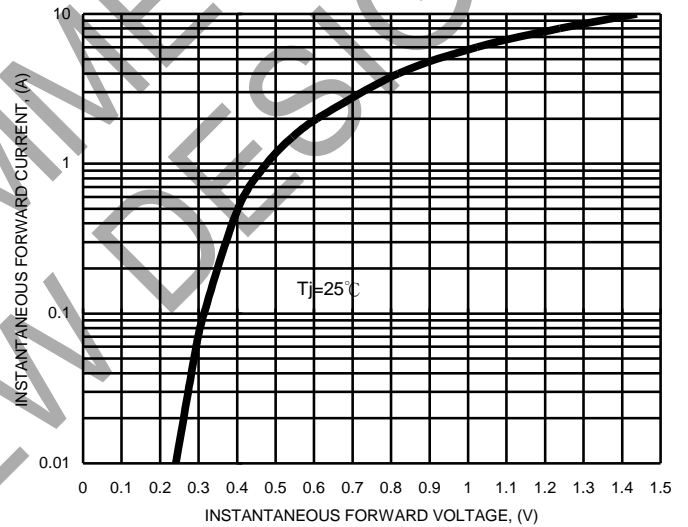
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



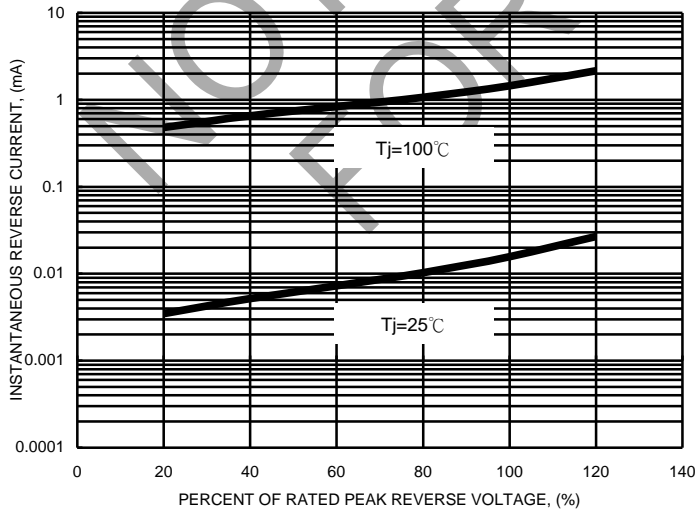
**FIG.3- TYPICAL JUNCTION CAPACITANCE**



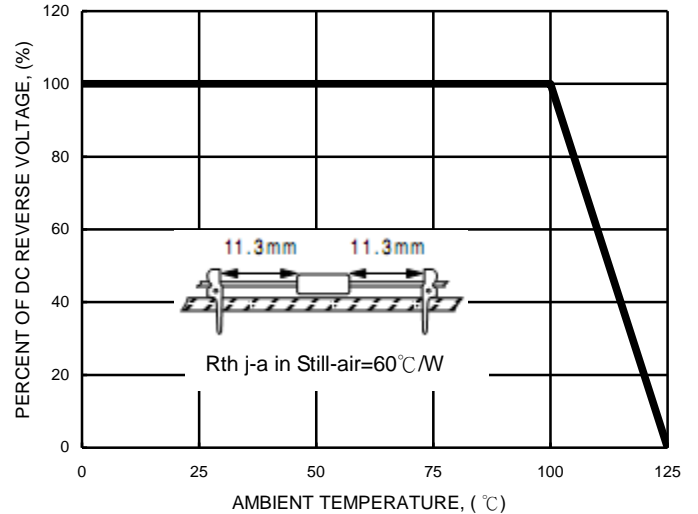
**FIG.4- TYPICAL FORWARD CHARACTERISTICS**



**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



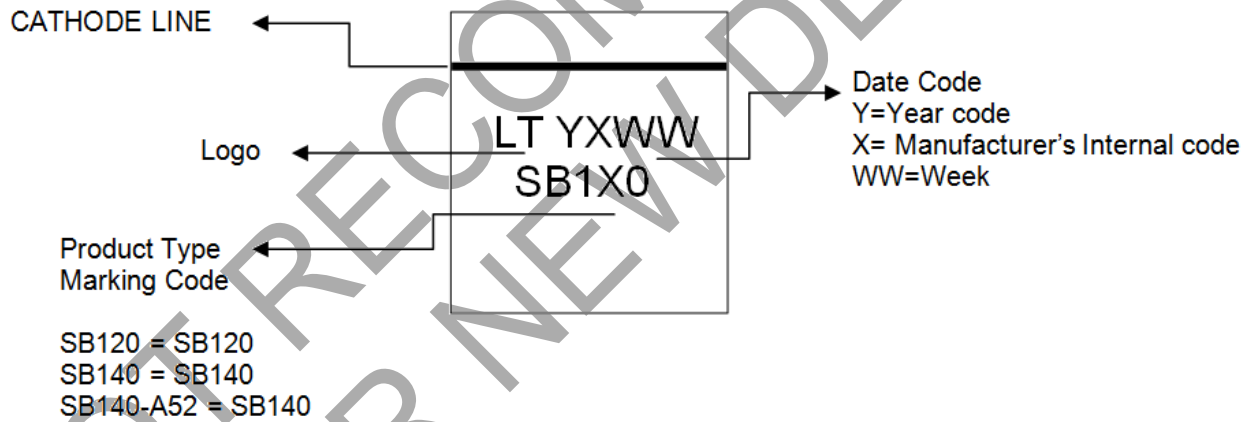
**FIG.6- DC REVERSE VOLTAGE DERATING CURVE**



### Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
SB120	DO-41	5000	Tape & Reel
SB140	DO-41	5000	Tape & Reel
SB140-A52	DO-41	3000	Ammo Pack

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