

SCHOTTKY BARRIER RECTIFIER

REVERSE VOLTAGE – 45 Volts
FORWARD CURRENT – 40 Amperes

FEATURES

- High surge capability
- Metal of silicon rectifier, majority carrier conduction
- Guard ring for transient protection
- Low power loss, high efficiency
- High current capability, low V_F
- Qualification is according to AEC-Q101 Rev_C
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

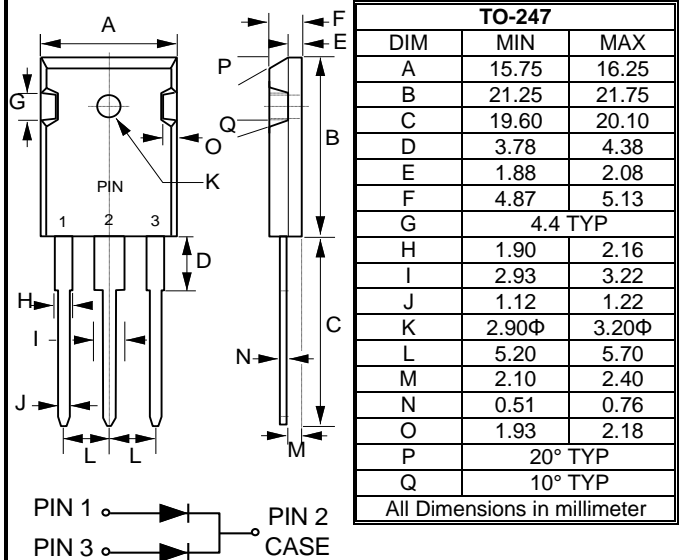
APPLICATION

- Low voltage high frequency inverters
- Polarity protection applications
- Freewheeling diodes

MECHANICAL DATA

- Package: JEDEC TO-247
- Package Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free"
- Weight: 6.4 grams (Approximate)
- Marking Code: SBL4045PTW

TO-247



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	45	V
Maximum DC blocking voltage	V_{DC}	45	V
Maximum average rectified output current	$I_{(AV)}$	40	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	I_{FSM}	375	A
Operating junction temperature range	T_J	-55 to +125	°C
Storage temperature range	T_{STG}	-55 to +150	

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=20A$ $T_J=25^\circ C$ $T_J=100^\circ C$	V_F	-- 0.50	0.58 --	V
Leakage current	$V_R=45V$ $T_J=25^\circ C$ $T_J=100^\circ C$	I_R	-- 17..94	0.5 100	mA
Typical junction capacitance (Note 5)		C_J		850	pF

THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	TYP	UNIT
Typical thermal resistance (Notes 6, 7)	R_{thJC} R_{thJL}	1 1	°C/W

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. 300us pulse width, 2% duty cycle.
5. Measured at 1.0MHz and applied voltage of 4.0V DC.
6. Thermal resistance test performed in accordance with JESD-51.
7. The unit mounted on Aluminum plate 100mm x 100mm x 2mm.

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RATING AND CHARACTERISTIC CURVES
SBL4045PTW

FIG.1 FORWARD CURRENT DERATING CURVE

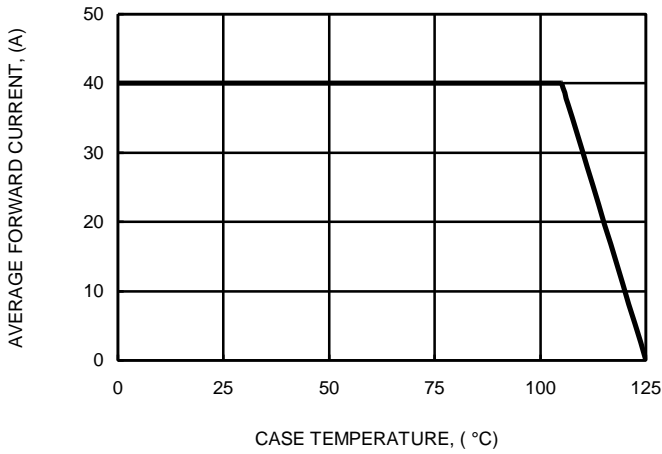


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

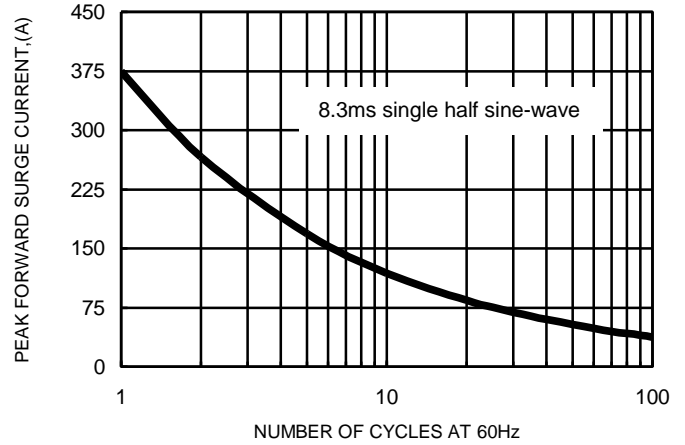


FIG.3 TYPICAL FORWARD CHARACTERISTICS

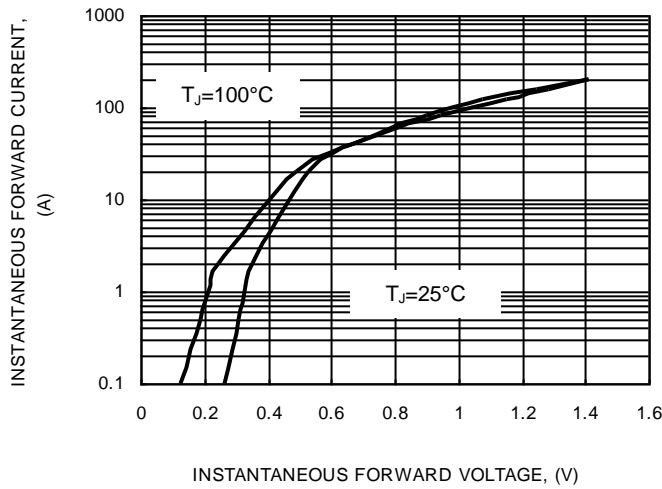


FIG.4 TYPICAL JUNCTION CAPACITANCE

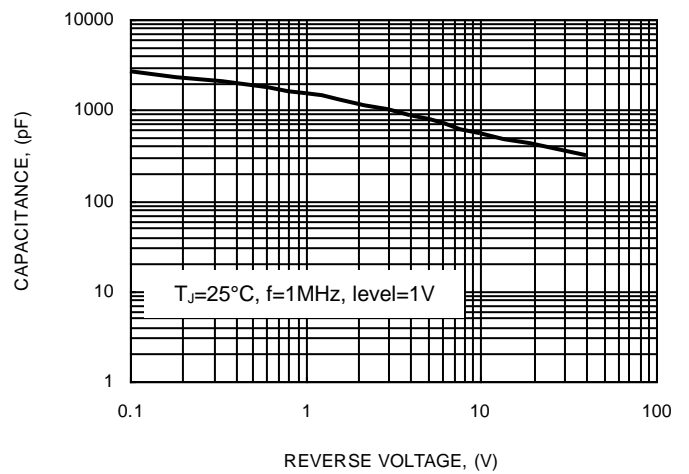
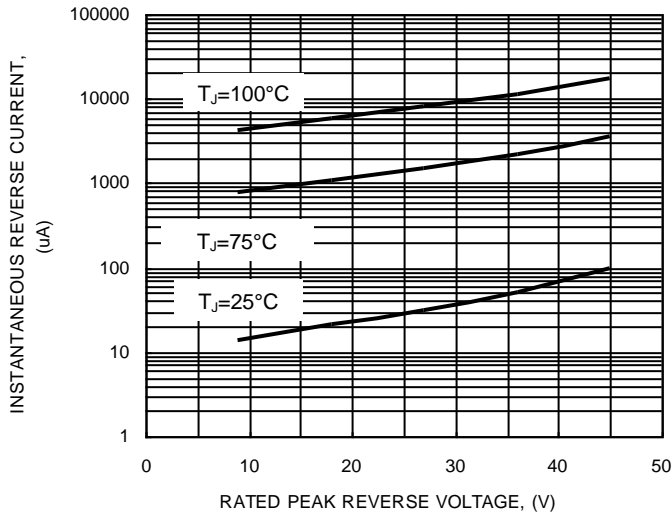


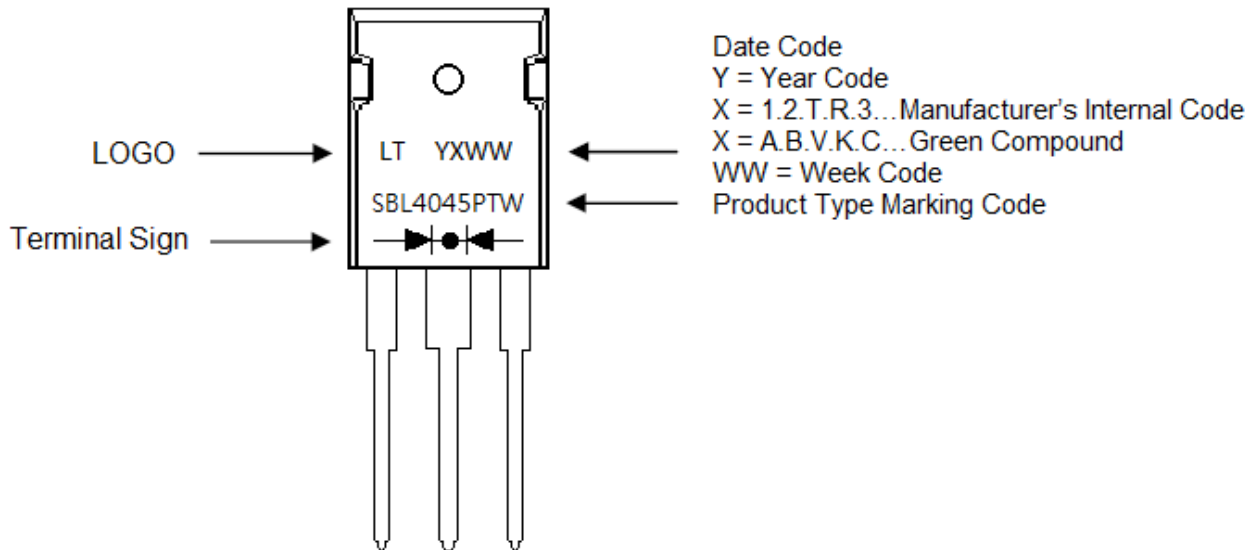
FIG.5 TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
SBL4045PTW	TO-247	30 pcs	Tube

Marking Information:



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