

SCHOTTKY BARRIER RECTIFIER

REVERSE VOLTAGE – 40 Volts
FORWARD CURRENT – 60 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)**

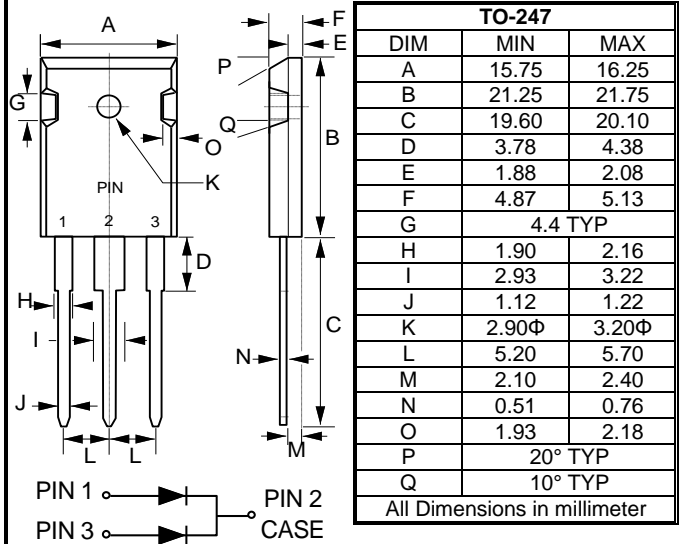
APPLICATION

- 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: SBL6040PTW

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}	40	V
Maximum DC blocking voltage	V_{DC}	40	V
Maximum average rectified output current	$I_{(AV)}$	60	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load.	I_{FSM}	450	A
Operating junction temperature range	T_J	-55 to +125	°C
Storage temperature rang	T_{STG}	-55 to +150	°C

STATIC ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage (Note 4)	$I_F=30A$ $T_J=25^\circ C$ $T_J=100^\circ C$	V_F	--	0.55	V
			0.48	--	
Leakage current	$V_R=40V$ $T_J=25^\circ C$ $T_J=100^\circ C$	I_R	--	10	mA
			11.80	200	
Typical junction capacitance (Note 5)		C_J	1350		pF

THERMAL CHARACTERISTICS

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

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 4.0VDC.
6. Thermal resistance test performed in accordance with JESD-51.
7. The unit mounted on copper heat sink 100mm x 100mm x 1.9mm and Aluminum 100mm x 75mm x 27mm.

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RATING AND CHARACTERISTIC CURVES
SBL6040PTW

FIG.1 FORWARD CURRENT DERATING CURVE

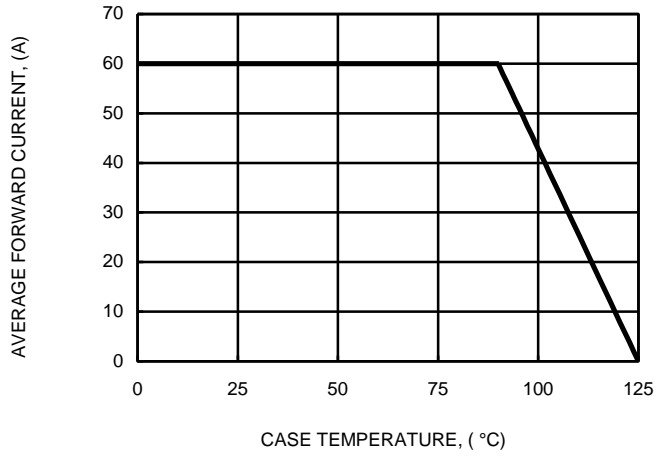


FIG.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

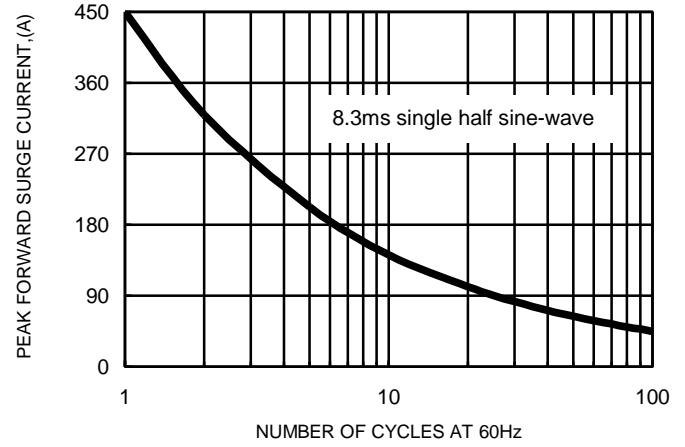


FIG.3 TYPICAL FORWARD CHARACTERISTICS

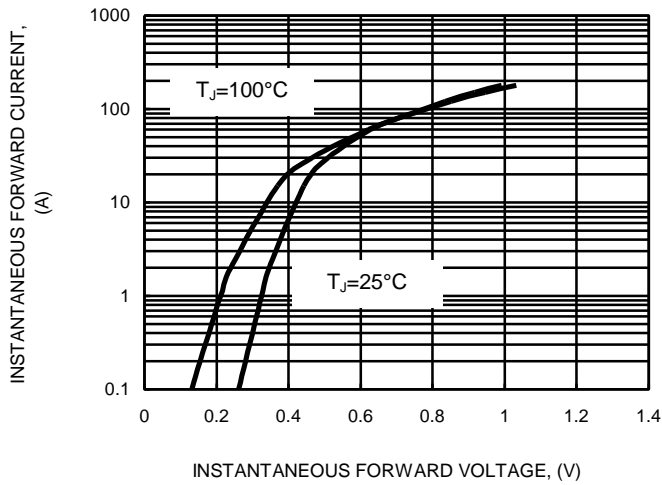


FIG.4 TYPICAL JUNCTION CAPACITANCE

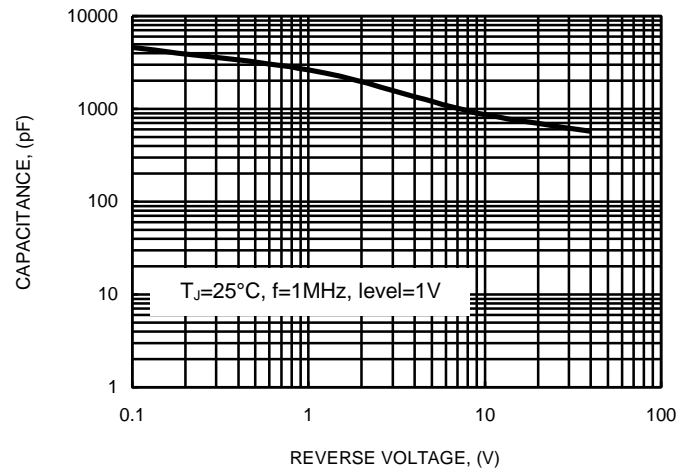
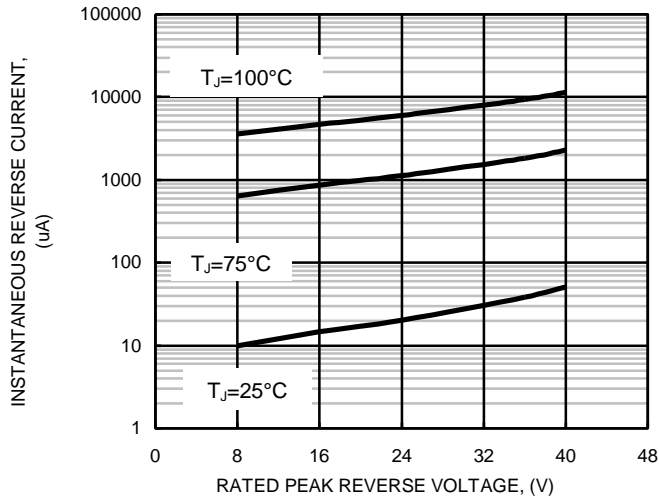


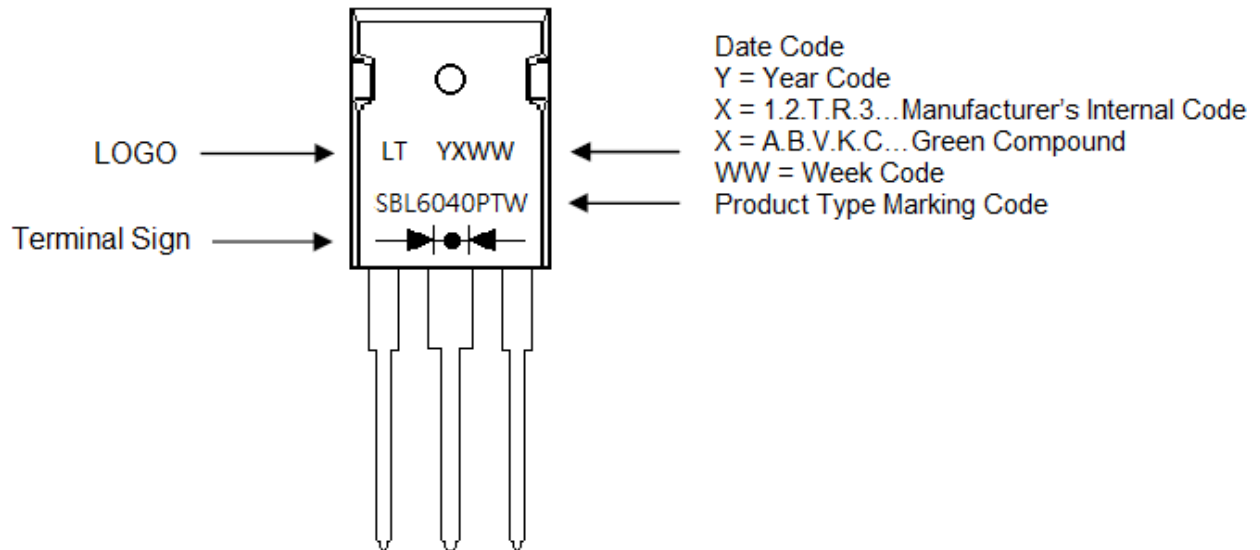
FIG.5 TYPICAL REVERSE CHARACTERISTICS



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
SBL6040PTW	TO-247	30 pcs	Tube

Marking Information:



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