

SBL2045CTW

SCHOTTKY BARRIER RECTIFIER

REVERSE VOLTAGE – 45 Volts
FORWARD CURRENT – 20 Amperes

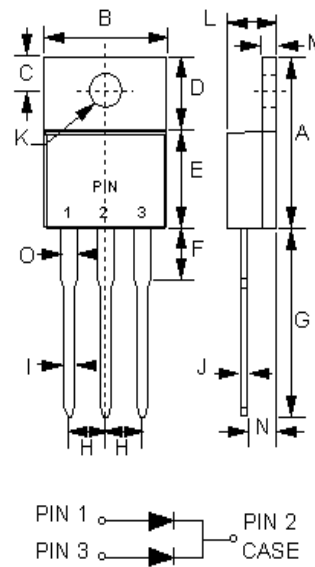
FEATURES

- Metal of silicon rectifier, majority carrier conduction
- Guard ring for transient protection
- Low power loss, high efficiency
- High current capability, low V_F
- High surge capability
- Qualified according to AEC-Q101 Rev_C
- Plastic package has UL flammability classification 94V-0
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- 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 TO-220AB
- Polarity indicator: As marked on the body
- Weight: 0.08 ounces, 2.24 grams
- Terminals: Lead Free Plating (Matte Tin Finish)
- Max. mounting torque = 0.5N.m (5.1Kgf-cm)

TO-220AB



TO-220AB		
DIM.	MIN.	MAX.
A	14.40	15.20
B	9.65	10.67
C	2.54	3.43
D	5.84	6.86
E	8.26	9.28
F	-	4.20
G	12.70	14.73
H	2.29	2.79
I	0.51	1.14
J	0.30	0.64
K	3.53 \varnothing	4.09 \varnothing
L	3.56	4.83
M	1.14	1.40
N	2.03	2.92
O	1.14	1.70

All Dimensions in millimeter

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

PARAMETER	SYMBOL	SBL2045CTW	UNIT		
Device Marking Code	Note	SBL2045CTW	---		
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	45	V		
Maximum RMS Voltage	V_{RMS}	31.5	V		
Maximum DC Blocking Voltage	V_{DC}	45	V		
Average Rectified Output Current	I_F	20	A		
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	225	A		
Typical Junction Capacitance per Element (Note 4)	C_J	600	pF		
Storage Temperature Range	T_{STG}	-55 to +150	°C		
Operating Junction Temperature Range	T_J	-55 to +125	°C		
PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
Forward Voltage (Note 5)	$I_F=10A$ $T_J=25^\circ C$	V_F	---	0.55	V
Leakage Current (Note 5)	$V_R=Rated$ $T_J=25^\circ C$ $T_J=100^\circ C$	I_R	0.4	50	mA
THERMAL CHARACTERISTIC	SYMBOL	TYPICAL	UNIT		
Typical Thermal Resistance _ Junction to Case (Note 6)	$R_{\theta JC}$	3.0	°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. Measured at 1.0MHz and applied reverse voltage of 4.0 V_{DC} .
5. 300us Pulse Width, 2% Duty Cycle.
6. Thermal Resistance Junction to Case. Device mounted on L42 x H25 x W25mm_ black Aluminum finny heat sink.

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RATING AND CHARACTERISTIC CURVES
SBL2045CTW

FIG.1- FORWARD CURRENT DERATING CURVE

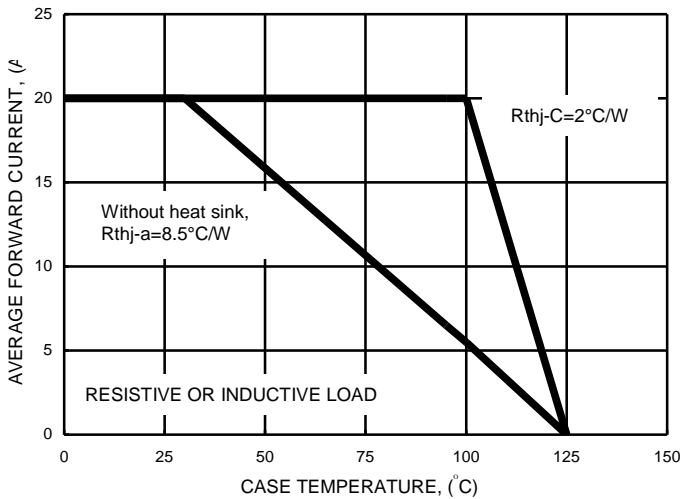


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

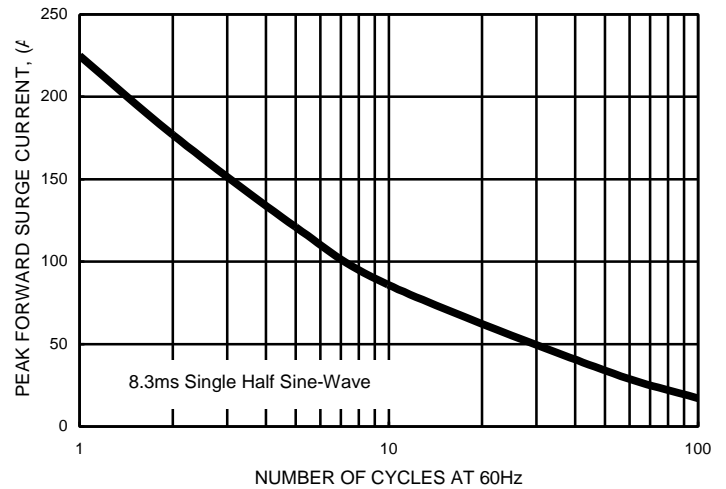


FIG.3- TYPICAL REVERSE CHARACTERISTICS

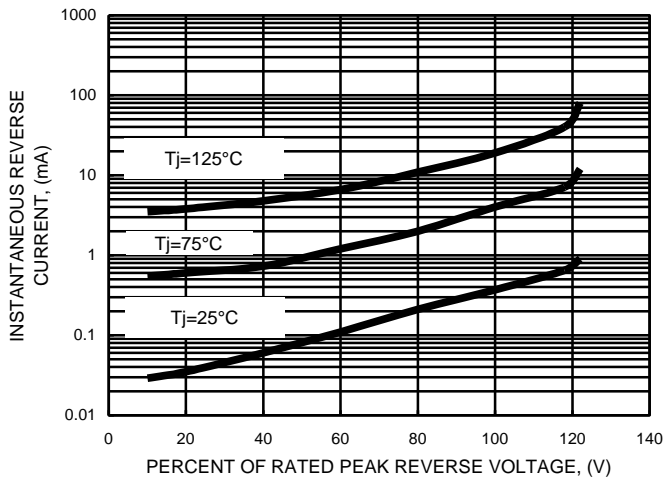


FIG.4- TYPICAL FORWARD CHARACTERISTICS

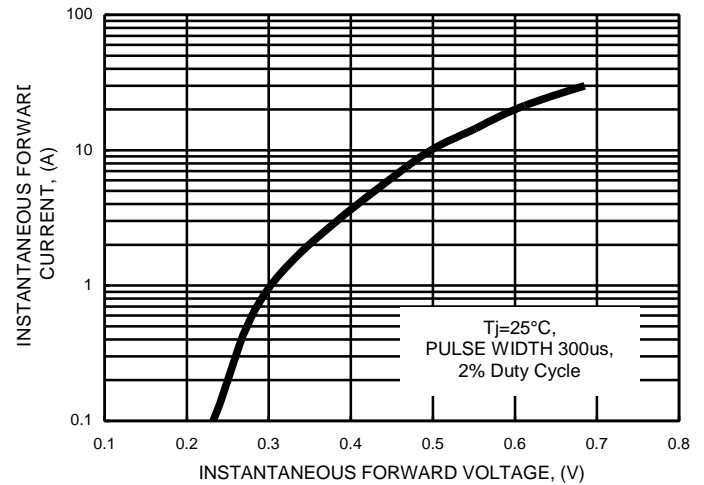


FIG.5- TYPICAL JUNCTION CAPACITANCE

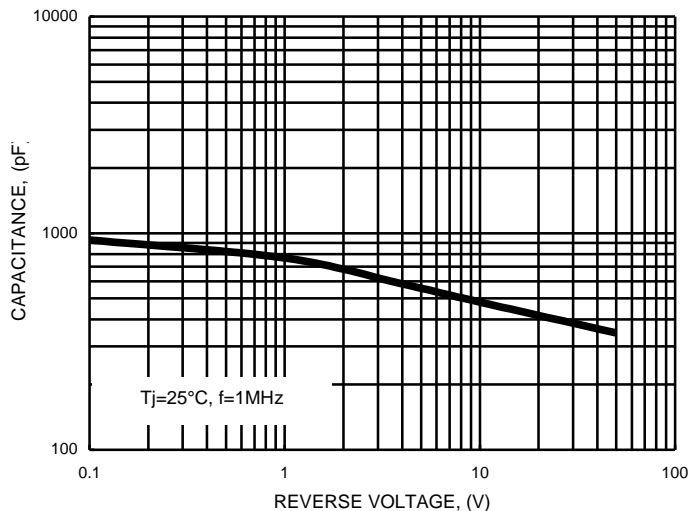
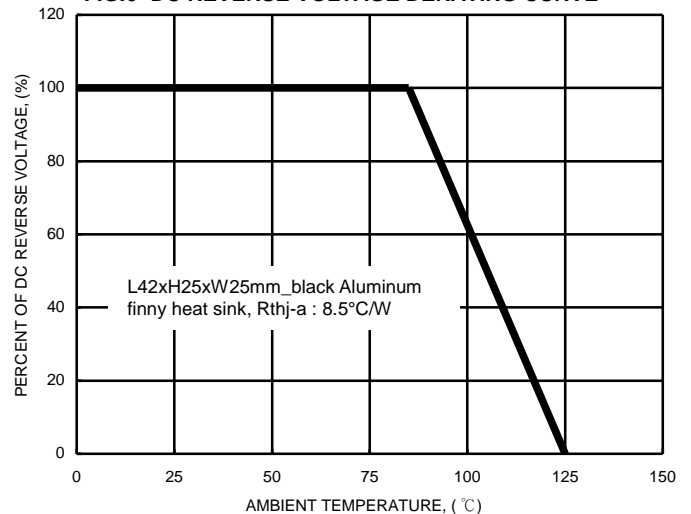


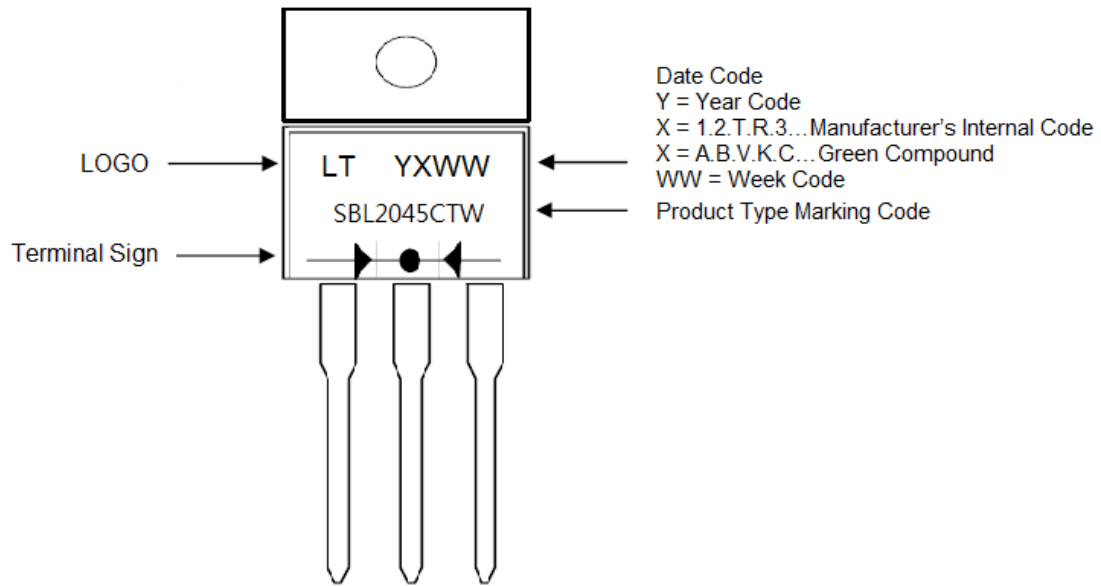
FIG.6- DC REVERSE VOLTAGE DERATING CURVE



Ordering Information:

Part Number	Package	Packing	
		Qty.	Carrier
SBL2045CTW	TO-220AB	50pcs	Tube

Marking Information:



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