30A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

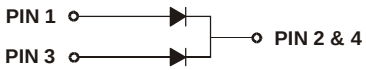
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 250A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish/RoHS Compliant Version (Note 1)**

Mechanical Data

- Case: TO-263
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Tin. Solderable per MIL-STD-202, Method 208 e3
- Polarity: See Diagram
- Weight: 1.7 grams (approximate)



Top View



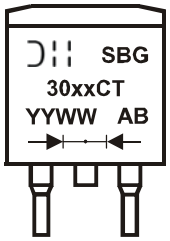
Polarity

Ordering Information (Note 2)

Part Number	Case	Packaging
SBG3030CT-T-F	TO-263	800/Tape & Reel, 13-inch
SBG3040CT-T-F	TO-263	800/Tape & Reel, 13-inch
SBG3045CT-T-F	TO-263	800/Tape & Reel, 13-inch

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
2. For packaging details, go to our website at http://www.diodes.com.

Marking Information



SBG30xxCT = Product Type Marking Code Where
xx = 30, 40, or 45 Depending on Device Type
= Manufacturers' Code Marking
YWW = Date Code Marking
Y = Last Digit of Year (ex: 2 for 2002)
WW = Week Code (01 - 53)

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Maximum Ratings @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%.

Characteristic	Symbol	SBG 3030CT	SBG 3040CT	SBG 3045CT	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage (Note 3)	V_{RRM} V_{RWM} V_R	30	40	45	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	28	32	V
Average Rectified Output Current @ T_C = 100°C	I_O	30			A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load	I_{FSM}	250			A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 4)	$R_{\theta JC}$	1.5	°C/W
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage, per Element @ I_F = 15A, T_C = 25°C	V_{FM}	0.55	V
Peak Reverse Current @ T_J = 25°C at Rated DC Blocking Voltage (Note 3) @ T_J = 100°C	I_{RM}	1.0 75	mA
Typical Total Capacitance (Note 5)	C_T	420	pF

Notes: 3. Short duration pulse test used to minimize self-heating effect.
4. Thermal resistance junction to case mounted on heatsink.
5. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC and per element.

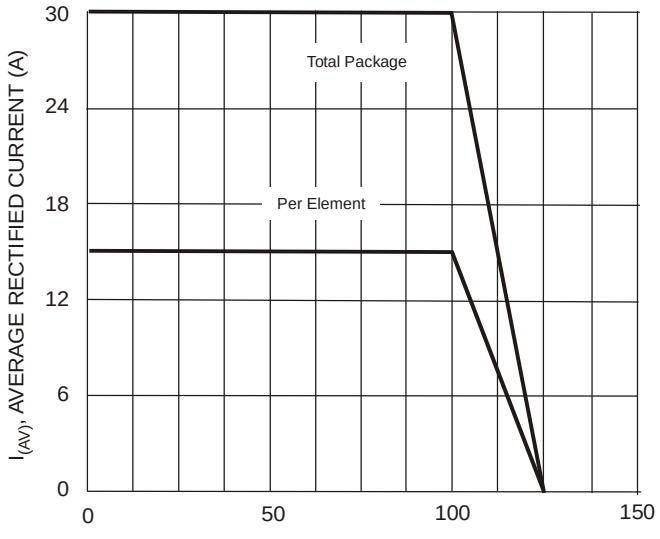


Fig. 1 Forward Derating Curve

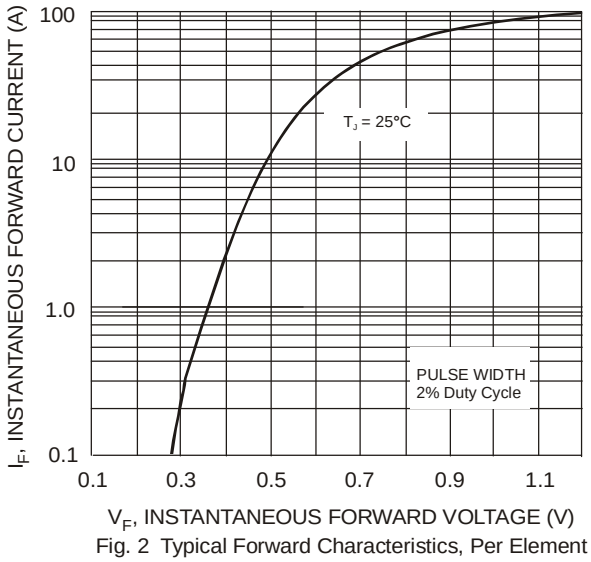


Fig. 2 Typical Forward Characteristics, Per Element

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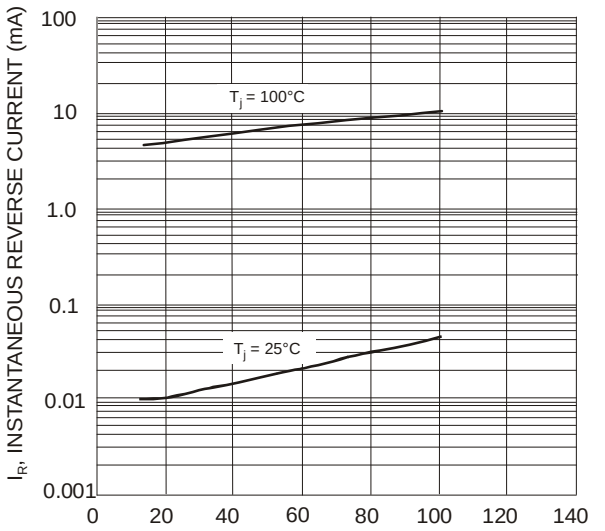


Fig. 3 Typical Reverse Characteristics

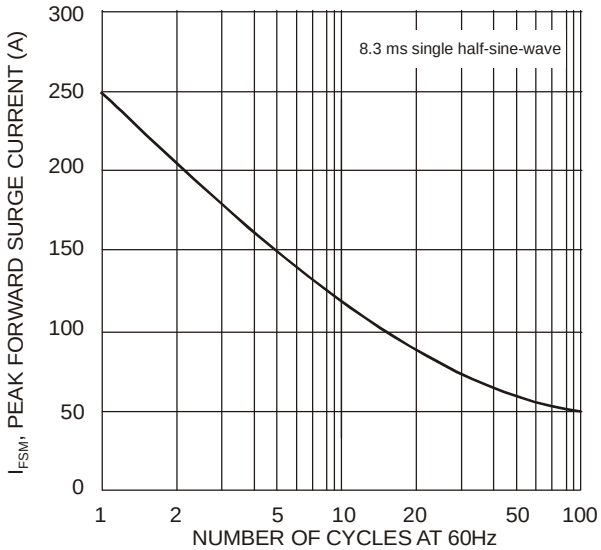


Fig. 4 Maximum Non-Repetitive Surge Current

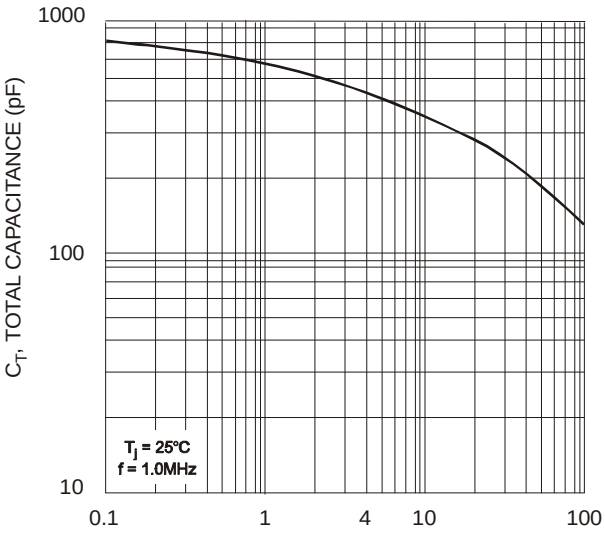
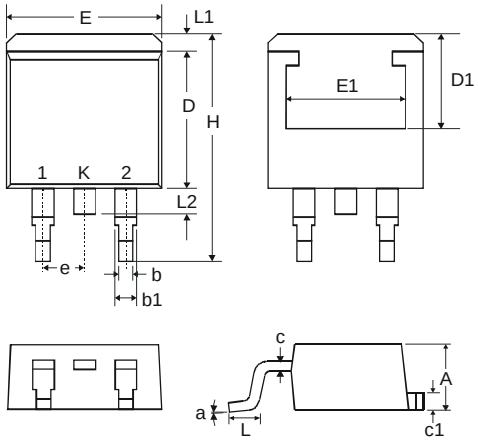


Fig. 5 Typical Total Capacitance, Per Element

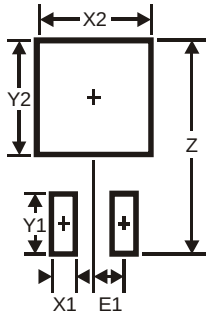
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Package Outline Dimensions



TO263		
Dim	**Min**	**Max**
A	4.07	4.82
b	0.51	0.99
b1	1.15	1.77
c	0.356	0.58
c1	1.143	1.65
D	8.39	9.65
D1	6.55	—
E	9.66	10.66
E1	6.23	—
e	2.54 Typ	
H	14.61	15.87
L	1.78	2.79
L1	—	1.67
L2	—	1.77
a	0°	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	16.9
X1	1.1
X2	10.8
Y1	3.5
Y2	7.01
E1	2.5

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