

Product Summary (Per Leg)

V_{RRM} (V)	I_o (A)	V_F max (V)	I_R max (mA)
45	15	0.51	0.4

Description

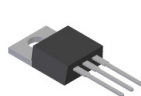
Packaged in the robust industry-standard TO220AB, ITO220AB package, the SBRT30A45CT and SBRT30A45CTFP provide very low V_F and excellent reverse leakage stability at high temperatures.

Features and Benefits

- Reduced Ultra-Low Forward Voltage Drop (V_F).
Better Efficiency and Cooler Operation.
- Reduced High Temperature Reverse Leakage.
Increased Reliability Against Thermal Runaway Failure in High Temperature Operation.
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

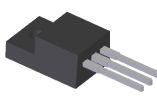
- Case: TO-220AB, ITO220AB
- Case Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish.
Solderable per MIL-STD-202, Method 208③
- Weight: TO-220AB – 1.85 grams (Approximate)
ITO-220AB – 1.65 grams (Approximate)



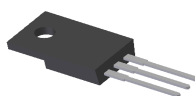
TO-220AB
Top View



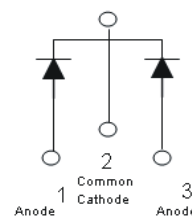
TO-220AB
Bottom View



ITO-220AB
Top View



ITO-220AB
Bottom View



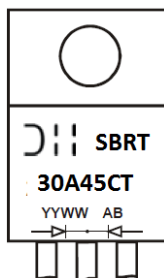
Package Pin-Out
Configuration

Ordering Information (Note 4)

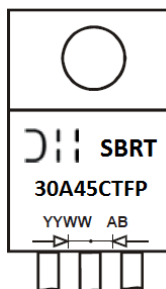
Part Number	Case	Packaging
SBRT30A45CT	TO-220AB	50 pieces/tube
SBRT30A45CTFP	ITO-220AB	50 pieces/tube

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html 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. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



SBRT30A45CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 15 = 2015)
 WW = Week (01-53)



SBRT30A45CT FP = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 15 = 2015)
 WW = Week (01-53)

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	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	45	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current (Per Leg) (Total)	I _O	15 30	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Per Leg)	I _{FSM}	240	A

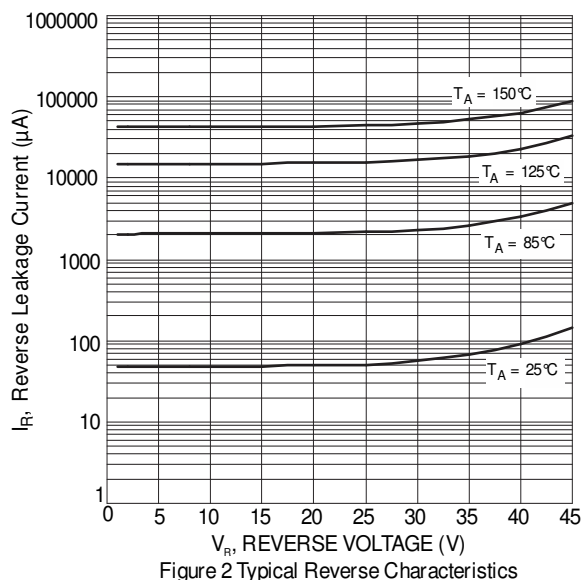
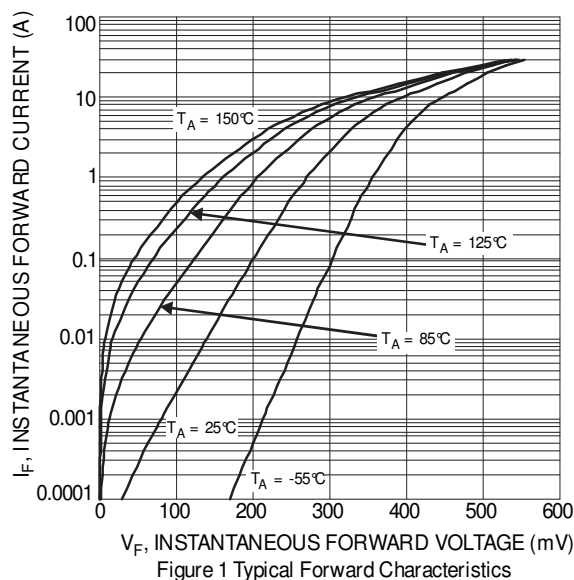
Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case TO220 (Note 5) ITO220 (Note 5)	R _{θJC}	1 2.5	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (Per Leg) (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	—	0.44 0.40	0.51 0.47	V	I _F = 15A, T _J = +25°C I _F = 15A, T _J = +125°C
Leakage Current (Note 6)	I _R	—	0.15 —	400 70	μA mA	V _R = 45V, T _J = +25°C V _R = 45V, T _J = +125°C

Notes: 5. Test with additional heatsink (50mm x 50mm x 23mm Al heatsink).
 6. Short duration pulse test used to minimize self-heating effect.



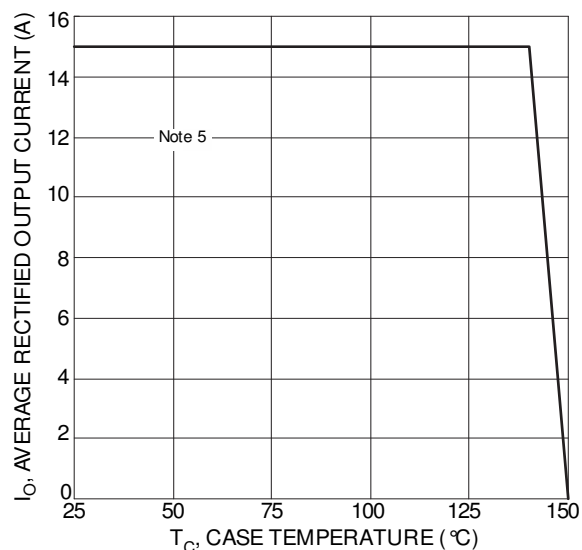


Figure 3 DC Forward Current Derating

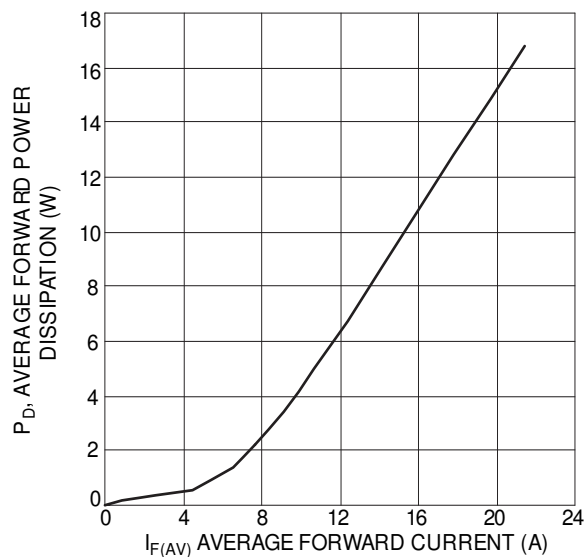


Figure 4 Forward Power Dissipation

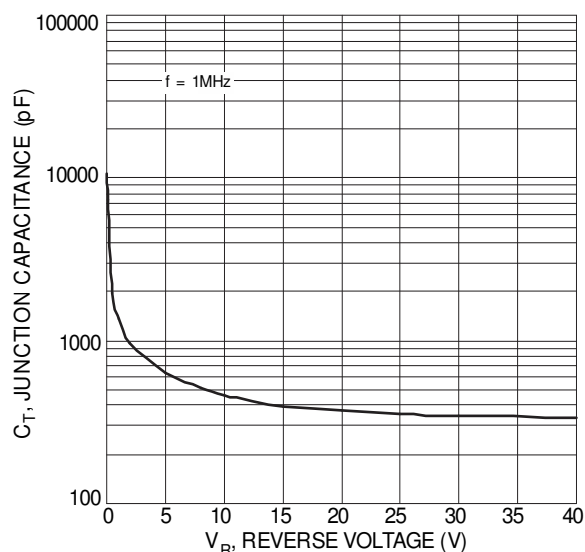
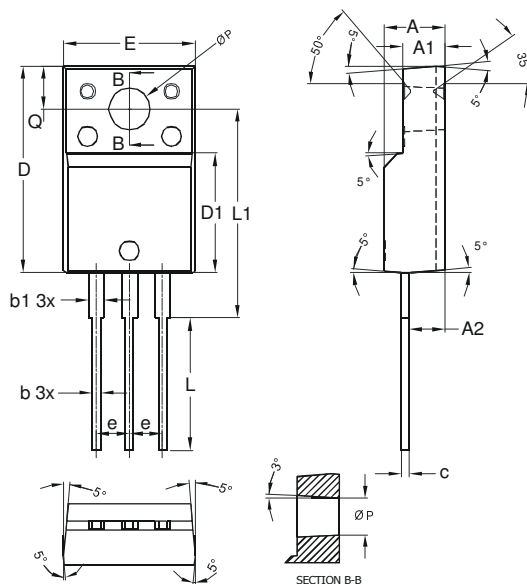
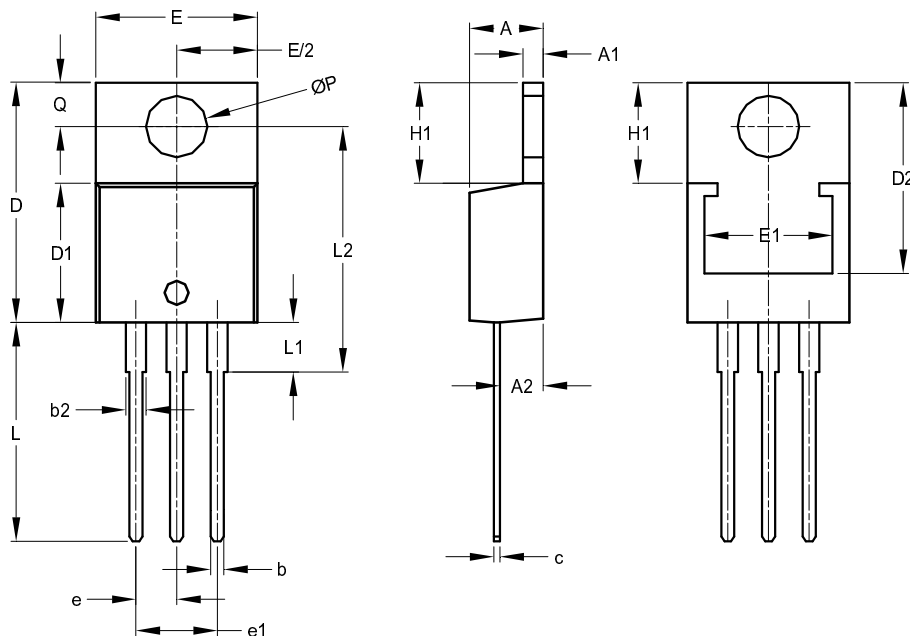


Figure 5 Typical Junction Capacitance

Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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