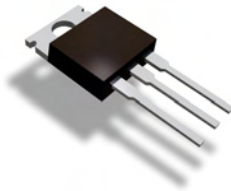


Features

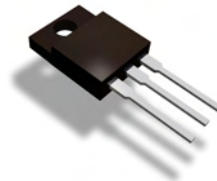
- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead Free Finish, RoHS Compliant (Note 2)**

Mechanical Data

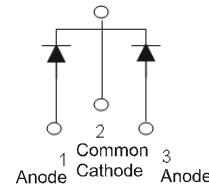
- Case: TO-220AB and ITO-220AB
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: TO-220AB - 2.1 grams (approximate)
ITO-220AB -1.9 grams (approximate)



TO-220AB



ITO-220AB



Package Pin Out Configuration

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} | 300 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| RMS Reverse Voltage | V _{R(RMS)} | 212 | V |
| Average Rectified Output Current @ _{T_C} = 150°C | I _O | 10 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 150 | A |
| Peak Repetitive Reverse Surge Current (2µs-1Khz) | I _{RRM} | 3 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Maximum Thermal Resistance (per leg) Package = TO-220AB Package = ITO-220AB | R _{θJC} | 2 4 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +175 | °C |

Electrical Characteristics @_{T_A} = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|------|----------------------|------|--|
| Reverse Breakdown Voltage (Note 1) | V _{(BR)R} | 300 | - | - | V | I _R = 0.2mA |
| Forward Voltage Drop | V _F | - | 0.64 | 0.86 0.71 0.92 | V | I _F = 5A, T _J = 25°C I _F = 5A, T _J = 125°C I _F = 10A, T _J = 25°C |
| Leakage Current (Note 1) | I _R | - | - | 0.2 25 | mA | V _R = 300V, T _J = 25°C V _R = 300V, T _J = 125°C |
| Reverse Recovery Time | t _{rr} | - | 25 | 30 | ns | I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A |
| | | - | 28 | 35 | | I _F = 1A, V _R = 30V di/dt = 100A/µs, T _J = 25°C |

Notes: 1. Short duration pulse test used to minimize self-heating effect.
2. RoHS revision 13.2.2003. High temperature solder exemption applied, see EU Directive Annex Note 7.

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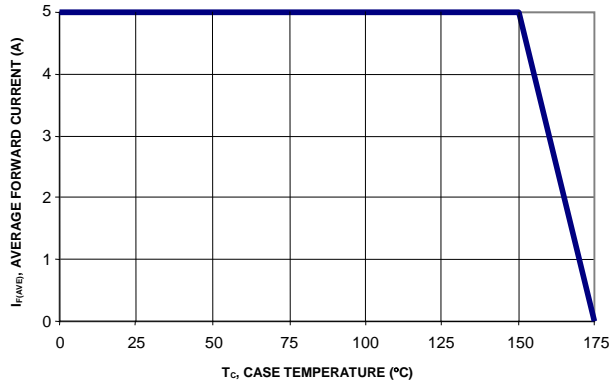


Figure 1: Current Derating Curve, Per Element

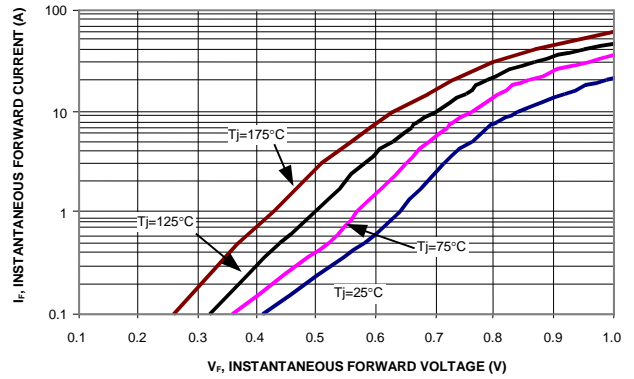


Figure 2: Typical Forward Characteristics, Per Element

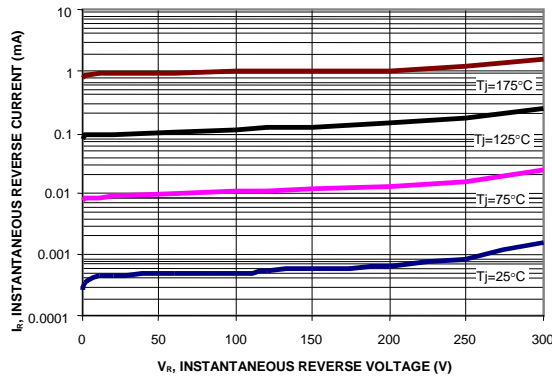


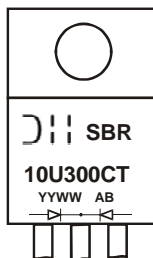
Figure 3: Typical Reverse Characteristics, Per Element

Ordering Information (Note 3)

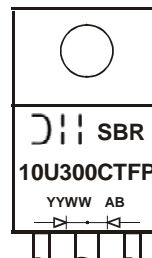
| Part Number | Case | Packaging |
|---------------|-----------|----------------|
| SBR10U300CT | TO-220AB | 50 pieces/tube |
| SBR10U300CTFP | ITO-220AB | 50 pieces/tube |

Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



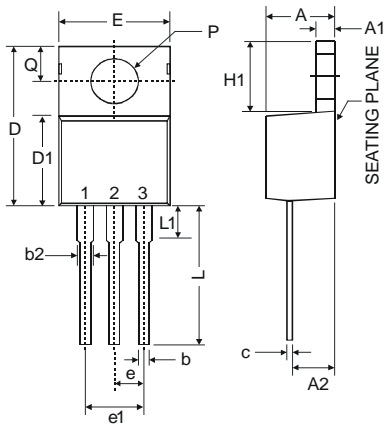
SBR10U300CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last two digits of year, ex:06 = 2006
 WW = Week (01-52)



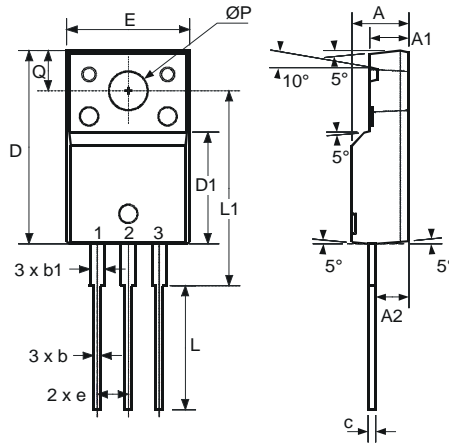
SBR10U300CTFP = Product Type Marking Code
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 YYWW = Date Code Marking
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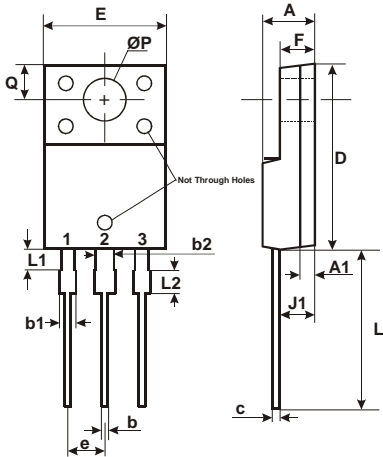
Package Outline Dimensions



| TO-220AB | | | |
|----------------------|-------|------|-------|
| Dim | Min | Typ | Max |
| A | 3.56 | - | 4.82 |
| A1 | 0.51 | - | 1.39 |
| A2 | 2.04 | - | 2.92 |
| b | 0.39 | 0.81 | 1.01 |
| c | 0.356 | - | 0.61 |
| D | 14.22 | - | 16.51 |
| D1 | 8.39 | - | 9.01 |
| e | 2.54 | | |
| e1 | 5.08 | | |
| E | 9.66 | - | 10.66 |
| H1 | 5.85 | - | 6.85 |
| L | 12.70 | - | 14.73 |
| L1 | - | - | 6.35 |
| P | 3.54 | - | 4.08 |
| Q | 2.54 | - | 3.42 |
| All Dimensions in mm | | | |



| ITO-220AB (Note 4) | | | |
|-----------------------|-------|-------|-------|
| Dim | Min | Typ | Max |
| A | 4.50 | 4.70 | 4.90 |
| A1 | 3.04 | 3.24 | 3.44 |
| A2 | 2.56 | 2.76 | 2.96 |
| b | 0.50 | 0.60 | 0.75 |
| b1 | 1.10 | 1.20 | 1.35 |
| c | 0.50 | 0.60 | 0.70 |
| D | 15.67 | 15.87 | 16.07 |
| D1 | 8.99 | 9.19 | 9.39 |
| e | 2.54 | | |
| E | 9.91 | 10.11 | 10.31 |
| L | 9.45 | 9.75 | 10.05 |
| L1 | 15.80 | 16.00 | 16.20 |
| P | 2.98 | 3.18 | 3.38 |
| Q | 3.10 | 3.30 | 3.50 |
| All Dimensions in mm | | | |



| ITO-220AB ALTERNATE (Note 4) | | |
|------------------------------------|----------|-------|
| DIM. | MIN. | MAX. |
| A | 4.30 | 4.70 |
| A1 | 1.3 | |
| b | 0.50 | 0.75 |
| b1 | 1.10 | 1.35 |
| b2 | 1.50 | 1.75 |
| c | 0.50 | 0.75 |
| D | 14.80 | 15.20 |
| E | 9.96 | 10.36 |
| e | 2.54 typ | |
| F | 2.80 | 3.20 |
| J1 | 2.50 | 2.90 |
| L | 12.80 | 13.60 |
| L1 | 1.70 | 1.90 |
| L2 | 1.90 | 2.10 |
| ØP | 3.50 typ | |
| Q | 2.70 typ | |
| All Dimensions in mm | | |

Notes: 4. For product manufactured with Date Code 0733 (week 33, 2007) and newer, please refer to ITO-220AB dimensions. For product manufactured prior to Date Code 0733, please refer to ITO-220AB ALTERNATE dimensions.

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