

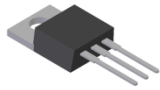
Product Summary (Per Leg)

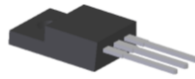
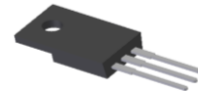
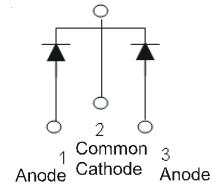
| V_{RRM} (V) | I_o (A) | V_F Max (V) @ +25°C | I_R Max (μA) @ +25°C |
|---------------|-----------|--------------------------|---------------------------|
| 120 | 15 | 0.93 | 100 |

Description and Applications

The Trench Schottky provides very low V_F and extremely excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors


 TO220AB (Generic)
Top View

 TO220AB (Generic)
Bottom View

 ITO220AB (Type HE)
Top View

 ITO220AB (Type HE)
Bottom View

 Package Pin Out
Configuration

Features

- Low Forward Voltage Drop
- Low Power Loss
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: TO220AB (Generic), ITO220AB (Type HE)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 ③
- Weight: TO220AB (Generic) - 1.85 grams (Approximate)
ITO220AB (Type HE) - 1.69 grams (Approximate)

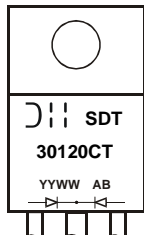
Ordering Information (Note 4)

| Part Number | Case | Packaging |
|--------------|--------------------|----------------|
| SDT30120CT | TO220AB (Generic) | 50 Pieces/Tube |
| SDT30120CTFP | ITO220AB (Type HE) | 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

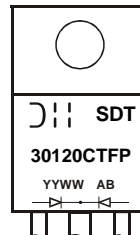
Marking Information

TO220AB (Generic)



ⓁⓂⓂ = Manufacturer's Marking
 SDT30120CT = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 17 = 2017)
 WW = Week (01 to 53)

ITO220AB (Type HE)



ⓁⓂⓂ = Manufacturer's Marking
 SDT30120CTFP = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 17 = 2017)
 WW = Week (01 to 53)

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

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

| Characteristic | Symbol | Value | Unit |
|---|------------------|----------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 120 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current per Device (Per Leg) (Total) | I _O | 15 30 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 150 | A |

Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance (Note 5) Package = TO220AB (Generic) Package = ITO220AB (Type HE) | R _{θJC} | 2 4 | °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 | — | 0.73 | — | V | I _F = 10A, T _J = +25°C |
| | | — | 0.87 | 0.93 | | I _F = 15A, T _J = +25°C |
| | | — | 0.67 | 0.73 | | I _F = 15A, T _J = +125°C |
| Leakage Current (Note 6) | I _R | — | 4 | 100 | μA mA | V _R = 120V, T _J = +25°C |
| | | — | 3 | 20 | | V _R = 120V, T _J = +125°C |

Notes: 5. With 50mm*50mm*23mm Al heatsink.
6. Short duration pulse test used to minimize self-heating effect.

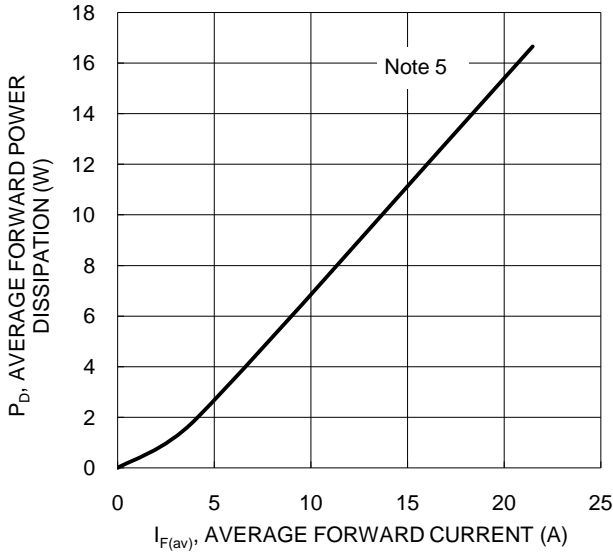


Figure 1. Forward Power Dissipation

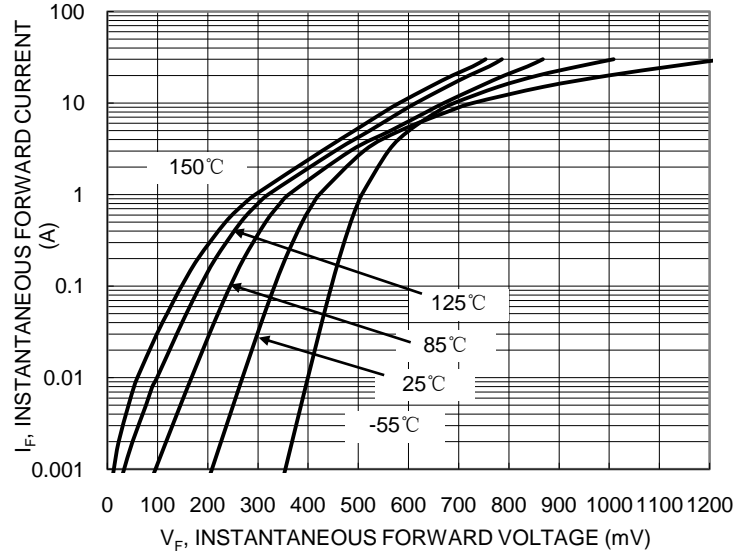


Figure 2. Typical Forward Characteristics

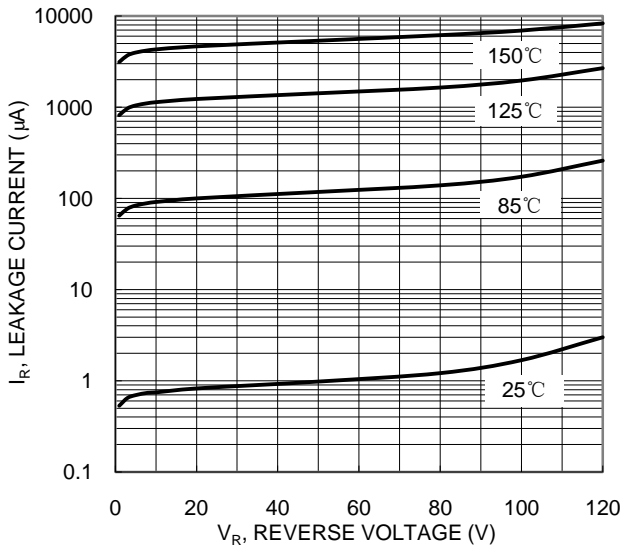


Figure 3. Typical Reverse Characteristics

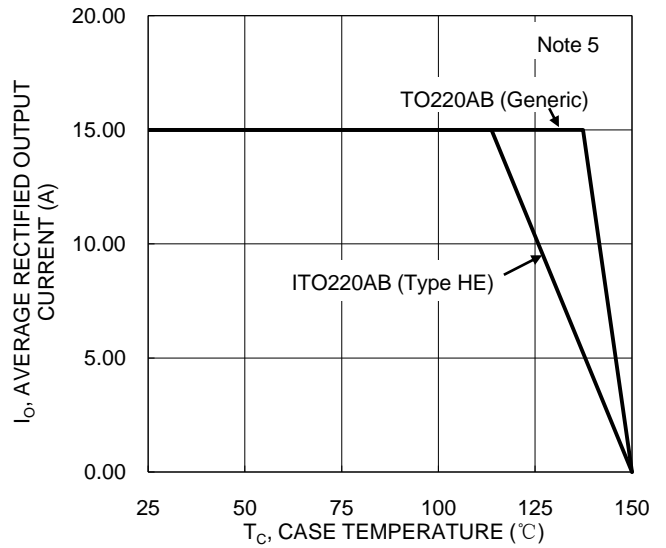


Figure 4. DC Forward Current Derating

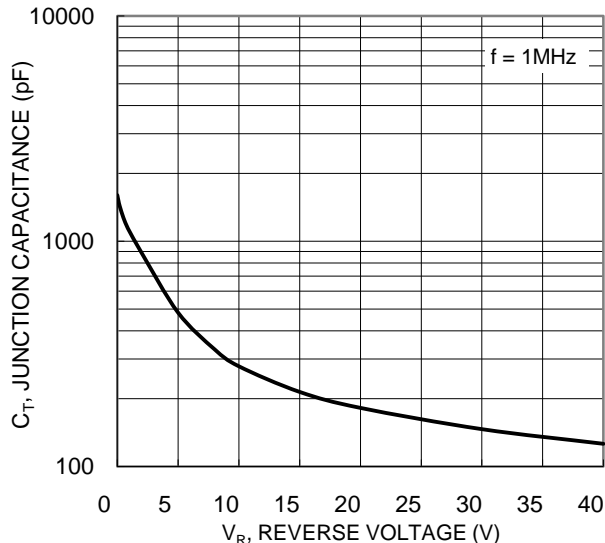
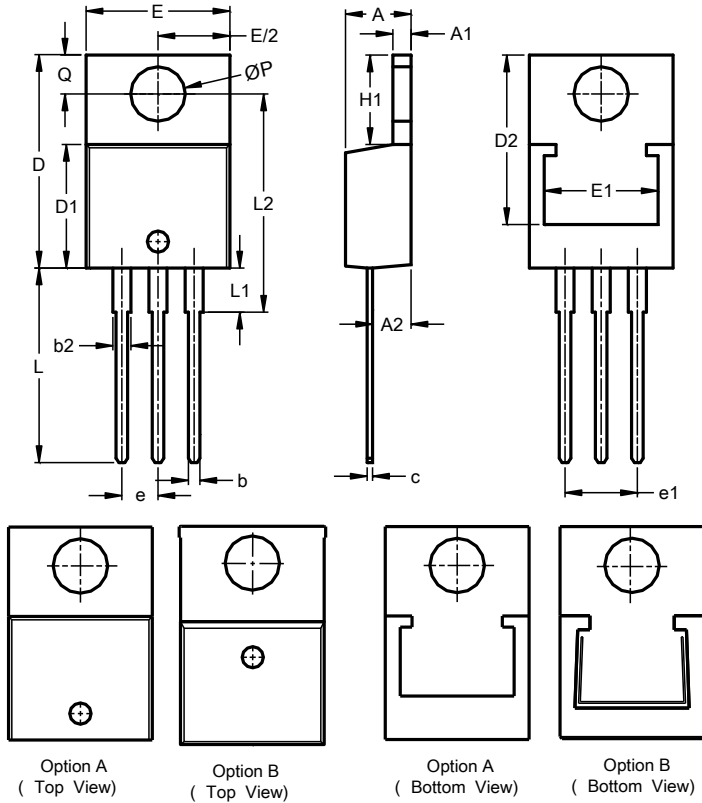


Figure 5. Typical Junction Capacitance

Package Outline Dimensions

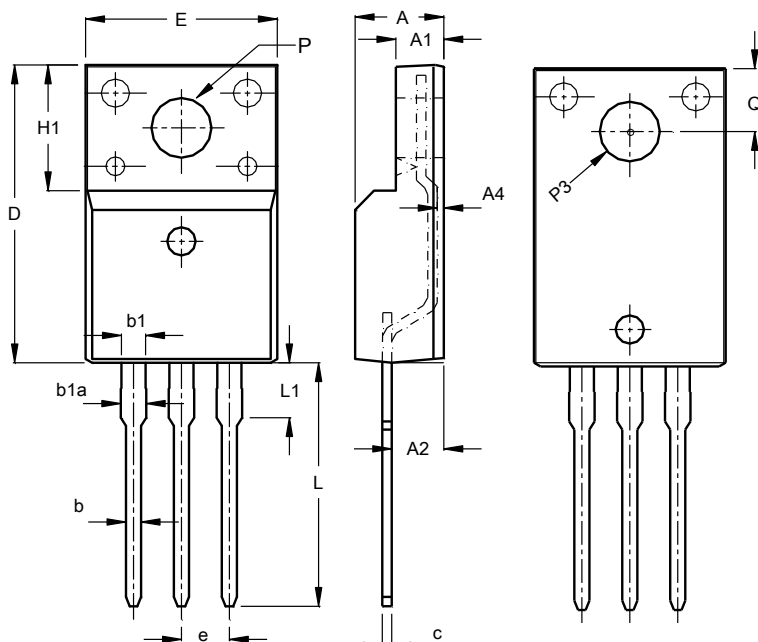
Please see <http://www.diodes.com/package-outlines.html> for the latest version.

(1) Package Type: TO220AB (Generic)



| TO220AB (Generic) | | | |
|----------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 3.56 | 4.82 | - |
| A1 | 0.51 | 1.39 | - |
| A2 | 2.04 | 2.92 | - |
| b | 0.39 | 1.01 | 0.81 |
| b2 | 1.15 | 1.77 | 1.24 |
| c | 0.356 | 0.61 | - |
| D | 14.22 | 16.51 | - |
| D1 | 8.39 | 9.01 | - |
| D2 | 11.45 | 12.87 | - |
| e | - | - | 2.54 |
| e1 | - | - | 5.08 |
| E | 9.66 | 10.66 | - |
| E1 | 6.86 | 8.89 | - |
| H1 | 5.85 | 6.85 | - |
| L | 12.70 | 14.73 | - |
| L1 | - | 4.42 | - |
| L2 | 15.80 | 17.51 | 16.00 |
| P | 3.54 | 4.08 | - |
| Q | 2.54 | 3.42 | - |
| All Dimensions in mm | | | |

(2) Package Type: ITO220AB (Type HE)



| ITO220AB (Type HE) | | | |
|----------------------|----------|-------|-------|
| Dim | Min | Max | Typ |
| A | 4.50 | 4.90 | 4.70 |
| A1 | 2.34 | 2.74 | 2.54 |
| A2 | 2.56 | 2.96 | 2.76 |
| A4 | 0.30 | 0.60 | 0.45 |
| b | 0.70 | 0.95 | 0.80 |
| b1 | 1.18 | 1.43 | 1.28 |
| b1a | 1.25 | 1.55 | 1.35 |
| c | 0.45 | 0.60 | 0.50 |
| D | 15.57 | 16.17 | 15.87 |
| e | 2.54 BSC | | |
| E | 9.96 | 10.36 | 10.16 |
| H1 | 6.70 REF | | |
| L | 12.68 | 13.28 | 12.98 |
| L1 | 3.03 | 3.43 | 3.23 |
| Q | 3.15 | 3.45 | 3.30 |
| ØP | 3.03 | 3.38 | 3.18 |
| ØP3 | 3.15 | 3.65 | 3.45 |
| All Dimensions in mm | | | |

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