

Product Summary (Per Leg)

| V _{RRM} (V) | I _o (A) | V _F Max (V) @ +25°C | I _R Max (μA) @ +25°C |
|----------------------|--------------------|--------------------------------|---------------------------------|
| 120 | 15 | 0.86 | 100 |

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)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>

Description and Applications

The DIODES™ SDT30A120CT/SDT30A120CTFP 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



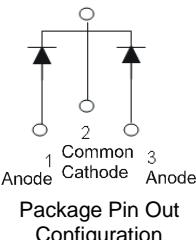
TO220AB (Generic)
Bottom View



ITO220AB
ITO220AB (Type HE)
Top View



ITO220AB
ITO220AB (Type HE)
Bottom View



Mechanical Data

- Package: TO220AB, ITO220AB
- Package Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Weight: TO220AB (Generic) - 1.85 grams (Approximate)
ITO220AB (Type HE) – 1.90 grams (Approximate)
ITO220AB – 1.90 grams (Approximate)

Ordering Information (Note 4)

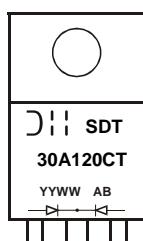
| Part Number | Package | Packing | |
|---------------|--------------------|-----------|---------|
| | | Qty. | Carrier |
| SDT30A120CT | TO220AB (Generic) | 50 Pieces | Tube |
| SDT30A120CTFP | ITO220AB | 50 Pieces | Tube |
| SDT30A120CTFP | ITO220AB (Type HE) | 50 Pieces | Tube |

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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information

TO220AB (Generic)

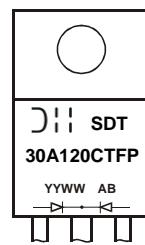


○ = Manufacturer's Marking
SDT30A120CT = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 22 = 2022)
WW = Week (01 to 53)

SDT30A120CT/SDT30A120CTFP

Document number: DS39113 Rev. 4 - 2

ITO220AB (Type HE)
ITO220AB



○ = Manufacturer's Marking
SDT30A120CTFP = Product Type Marking Code
AB = Foundry and Assembly Code
YYWW = Date Code Marking
YY = Last Two Digits of Year (ex: 22 = 2022)
WW = Week (01 to 53)

Maximum Ratings (Per Leg) (@ $T_A = +25^\circ\text{C}$, 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} | | |
| Working Peak Reverse Voltage | V_{RWM} | 120 | V |
| 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} | 180 | A |

Thermal Characteristics (Per Leg)

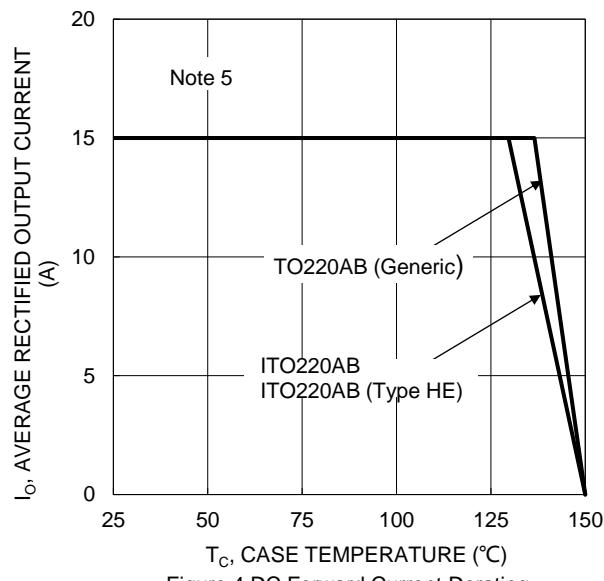
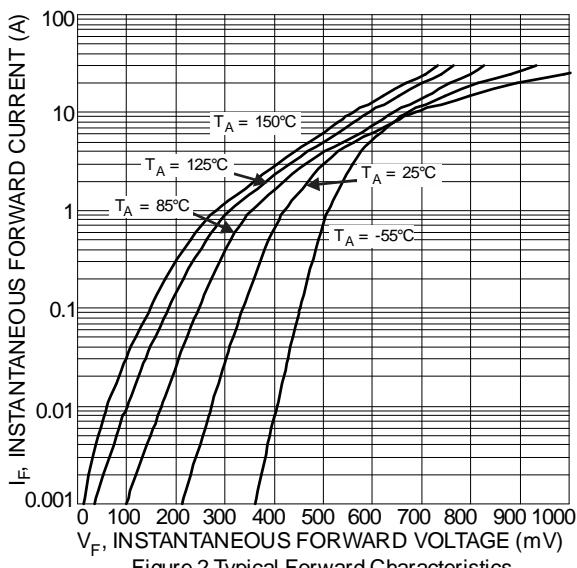
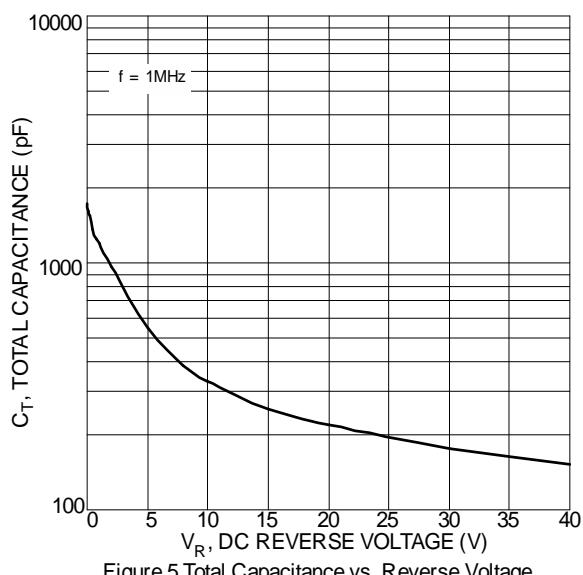
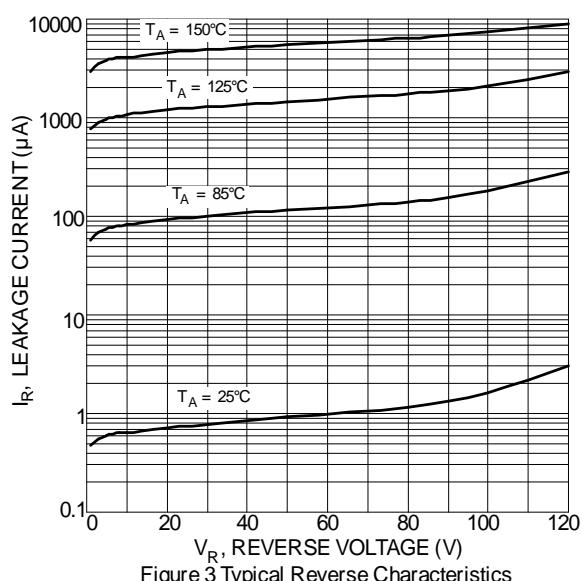
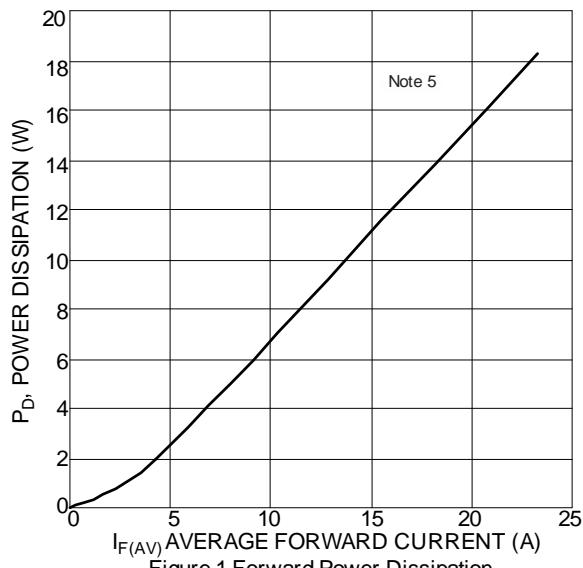
| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|---------------------------|
| Typical Thermal Resistance (Note 5) | | | |
| Package = TO220AB (Generic) | $R_{\theta JC}$ | 2 | $^\circ\text{C}/\text{W}$ |
| Package = ITO220AB | | 4 | |
| Package = ITO220AB (Type HE) | | 4 | |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Electrical Characteristics (Per Leg) (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|--------|-----|------|------|---------------|---|
| Forward Voltage Drop | V_F | — | 0.69 | — | V | $I_F = 10\text{A}, T_J = +25^\circ\text{C}$ |
| | | — | 0.80 | 0.86 | | $I_F = 15\text{A}, T_J = +25^\circ\text{C}$ |
| | | — | 0.65 | 0.72 | | $I_F = 15\text{A}, T_J = +125^\circ\text{C}$ |
| Leakage Current (Note 6) | I_R | — | 5 | 100 | μA | $V_R = 120\text{V}, T_J = +25^\circ\text{C}$ |
| | | — | 4 | 20 | mA | $V_R = 120\text{V}, T_J = +125^\circ\text{C}$ |

Notes: 5. With 50mm*50mm*23mm Al heatsink.

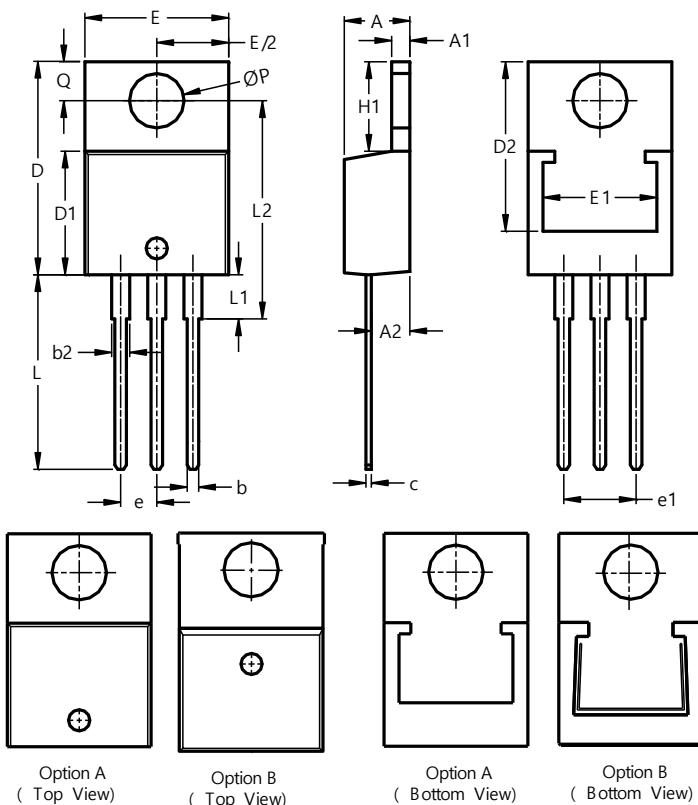
6. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

TO220AB (Generic)

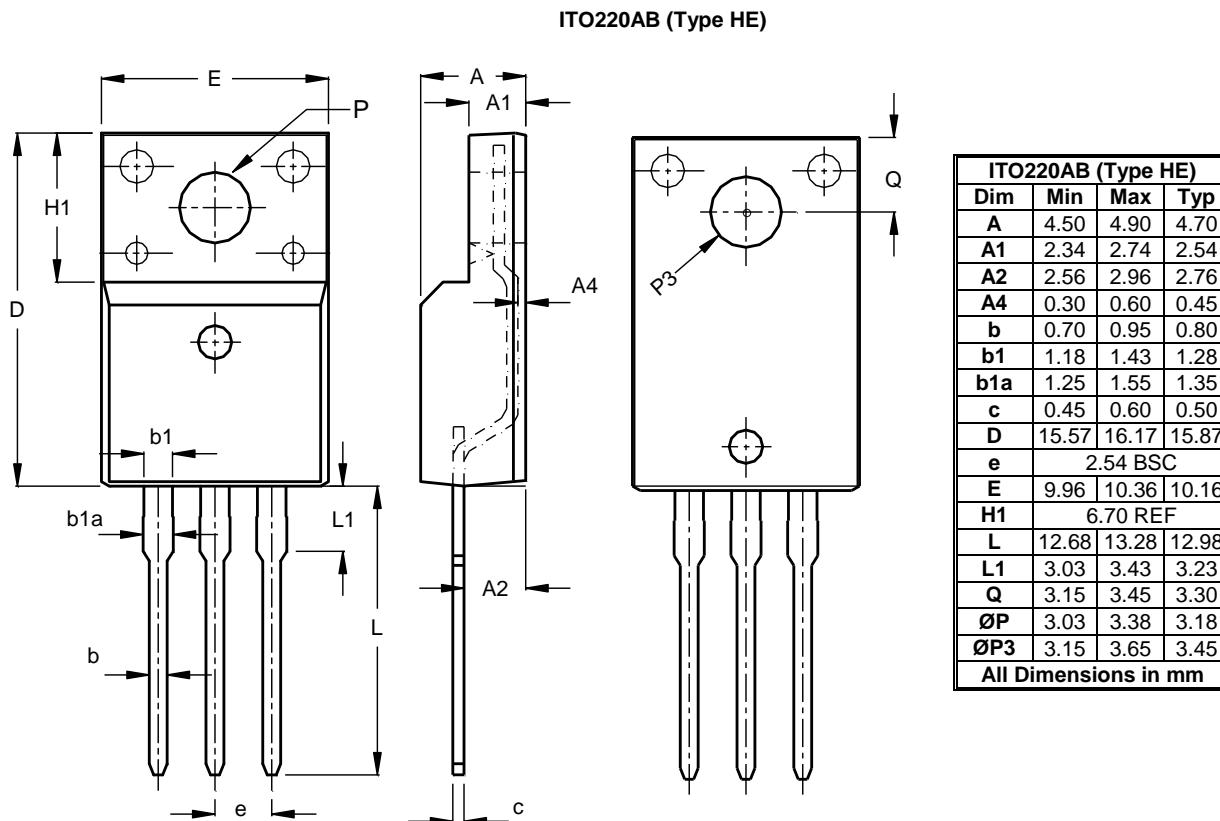


| TO220AB (Generic) | | | |
|-------------------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 3.56 | 4.82 | - |
| A1 | 0.51 | 1.39 | - |
| A2 | 2.04 | 2.92 | - |
| b | 0.39 | 1.01 | 0.81 |
| b2 | 1.15 | 1.77 | 1.24 |
| c | 0.356 | 0.61 | - |
| D | 14.22 | 16.51 | - |
| D1 | 8.39 | 9.01 | - |
| 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

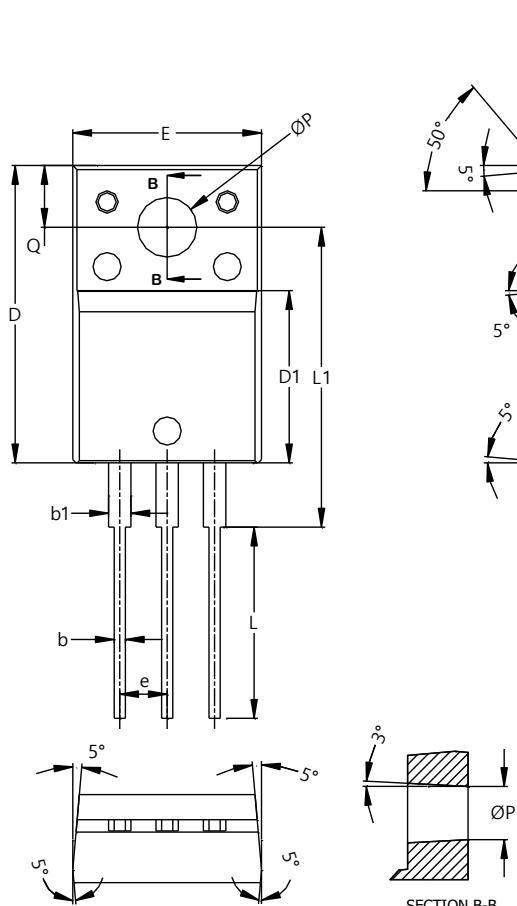
Package Outline Dimensions (continued)

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



Package Outline Dimensions (continued)

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



ITO220AB

| ITO220AB | | | |
|----------|-------|-------|-------|
| Dim | Min | Max | Typ |
| A | 4.50 | 4.90 | 4.70 |
| A1 | 3.04 | 3.44 | 3.24 |
| A2 | 2.56 | 2.96 | 2.76 |
| b | 0.50 | 0.75 | 0.60 |
| b1 | 1.10 | 1.35 | 1.20 |
| c | 0.50 | 0.70 | 0.60 |
| D | 15.67 | 16.07 | 15.87 |
| D1 | 8.99 | 9.39 | 9.19 |
| E | 9.91 | 10.31 | 10.11 |
| e | -- | -- | 2.54 |
| L | 9.45 | 10.05 | 9.75 |
| L1 | 15.80 | 16.20 | 16.00 |
| P | 2.98 | 3.38 | 3.18 |
| Q | 3.10 | 3.50 | 3.30 |

All Dimensions in mm

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