

Product Summary (Per Leg)

V_{RRM} (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (μA) @ +25°C
120	20	0.88	120

Description and Applications

The SDT40A120CTE 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:

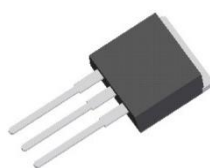
- DC-DC Converters
- AC-DC Adaptors

Features

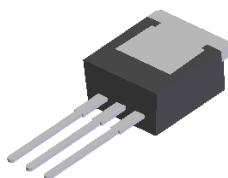
- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

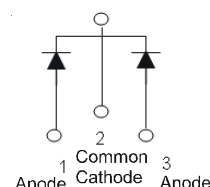
- Case: TO262 (Type HE)
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @3
- Weight: TO262 (Type HE) –1.355 grams (Approximate)



TO262 (Type HE)
Top View



TO262 (Type HE)
Bottom View



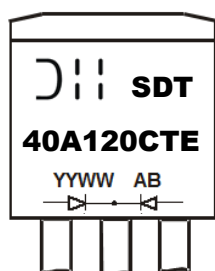
Package Pin Out
Configuration

Ordering Information (Note 4)

Part Number	Case	Packaging
SDT40A120CTE	TO262 (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



SDT40A120CTE = 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	20 40	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	220	A

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance (Note 5) Package = TO262 (Type HE)	R _{θJC}	3	°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	—	0.82	0.88	V	I _F = 20A, T _J = +25°C
		—	0.68	0.73		I _F = 20A, T _J = +125°C
Leakage Current (Note 6)	I _R	—	5	120	μA	V _R = 120V, T _J = +25°C
		—	4	25	mA	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.

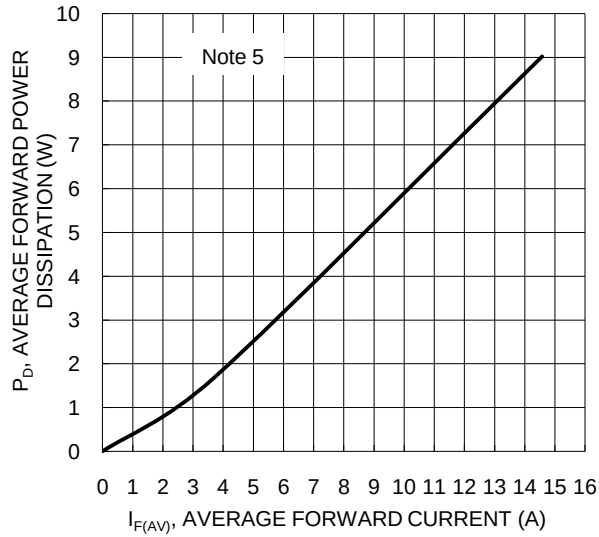


Figure1. Forward Power Dissipation

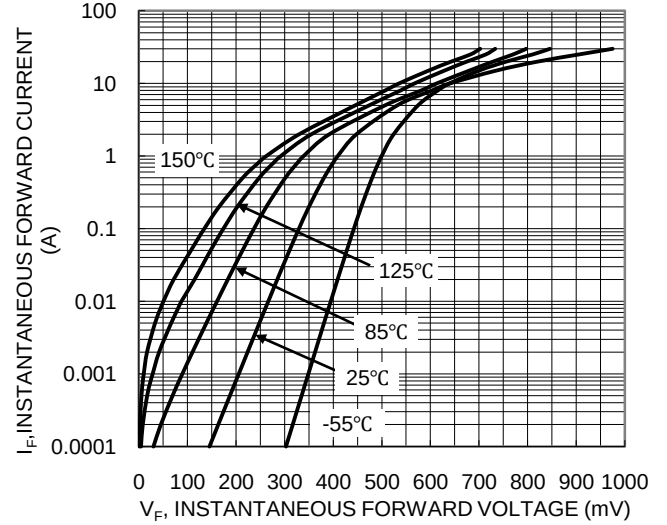


Figure 2. Typical Forward Characteristics

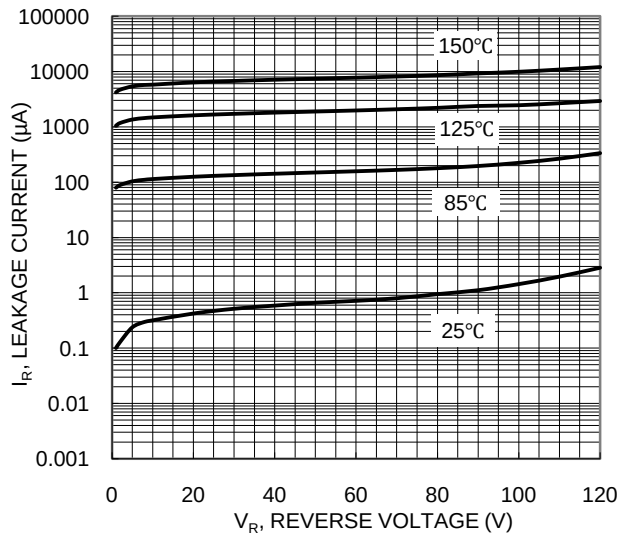


Figure 3. Typical Reverse Characteristics

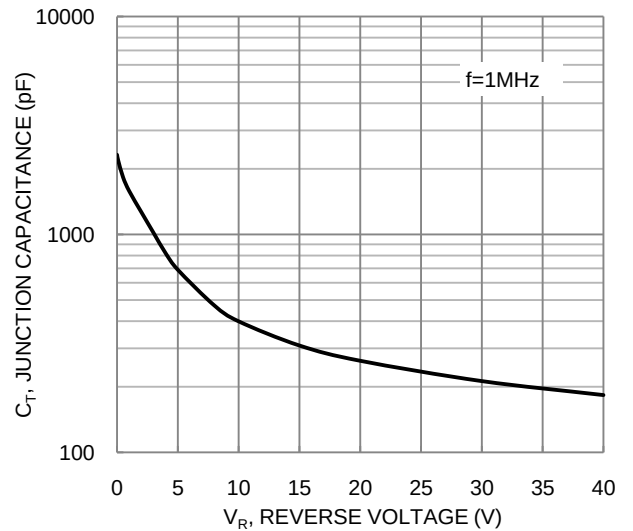


Figure 4. Typical Junction Capacitance

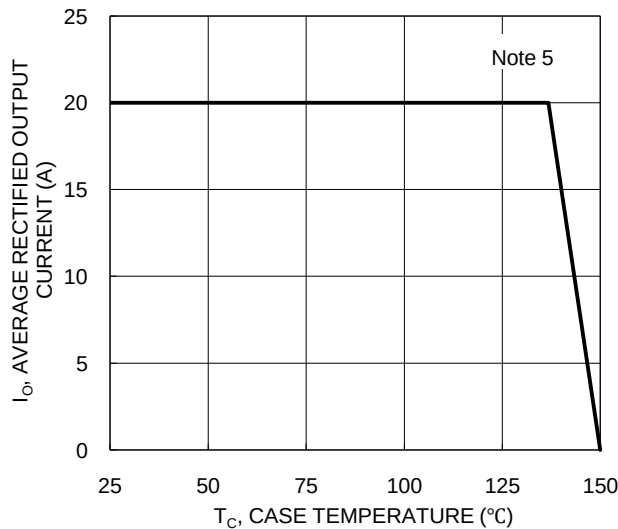
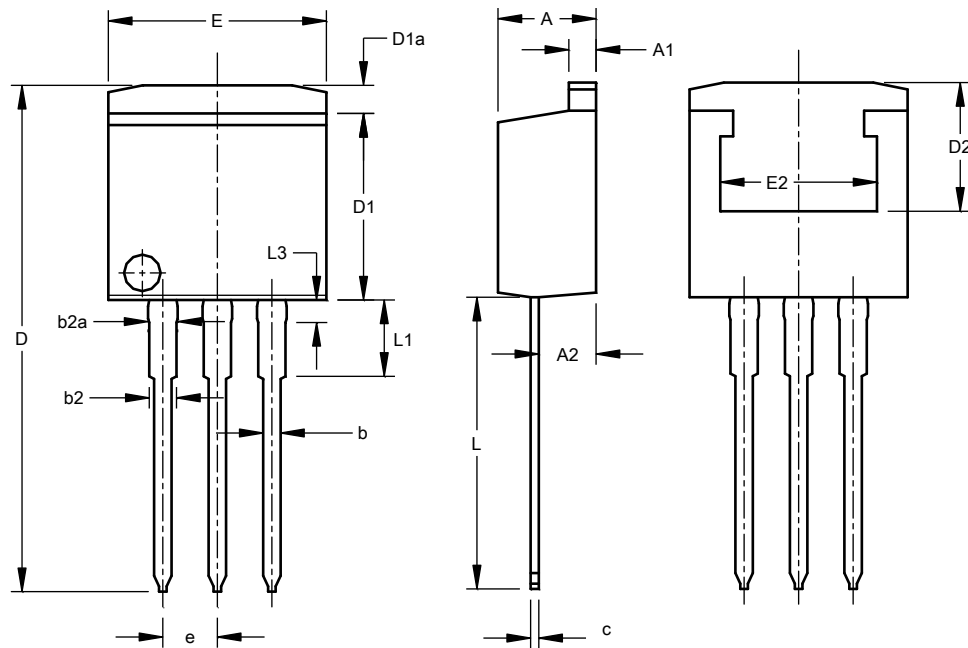


Figure 5. DC Forward Current Derating

Package Outline Dimensions

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

TO262 (Type HE)



TO262 (Type HE)			
Dim	Min	Max	Typ
A	4.37	4.77	4.57
A1	1.22	1.42	1.27
A2	2.47	2.87	2.67
b	0.70	0.97	0.813
b2	1.17	1.42	1.27
b2a	1.25	1.50	1.35
c	0.28	0.53	0.381
D	23.20	24.02	23.61
D1	8.38	8.90	8.70
D1a	--	1.31	--
D2	6.00	--	--
e	2.54 BSC		
E	9.90	10.39	10.16
E2	7.30	--	--
L	13.34	14.10	13.73
L1	3.30	4.06	3.56
L3	0.95	1.15	1.05
All Dimensions in mm			

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