

**Product Summary (@ T<sub>A</sub> = +25°C)**

V <sub>RRM</sub> (V)	I <sub>o</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (μA)	t <sub>RR</sub> (ns)
600	12	2.9	45	30

**Features and Benefits**

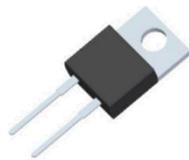
- Soft, Hyper Fast Switching Capability
- Glass Passivated Die Construction
- Especially Suited for Continuous Conduction Mode Power Factor Corrections
- High-Reliability and Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For 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](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

**Description and Applications**

Suitable for industrial power supplies, motor controls, and similar mission-critical systems; snubber, bootstrap, and demagnetization applications.

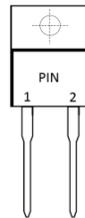
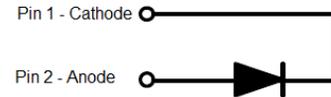
**Mechanical Data**

- Package: TO220AC
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish – Matte Tin Plated Leads Solderable per MIL-STD-202, Method 208 ③
- Polarity: See Diagram
- Weight: 1.894 grams (Approximate)



Top View

TO220AC (Type WX)

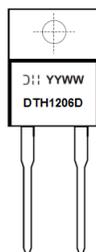

 Top View  
Pin-Out

**Ordering Information (Note 4)**

Part Number	Package	Packing	
		Qty.	Carrier
DTH1206D	TO220AC (Type WX)	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**

TO220AC (Type WX)



DTH1206D = Product Type Marking Code  
 ⑈⑈ = Manufacturers' Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 22 for 2022)  
 WW = Week Code (01 to 53)

**Maximum Ratings** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_R$	600	V
Average Rectified Output Current	$I_O$	12	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	120	A
Non-Repetitive Avalanche Energy @ $L = 15\text{mH}$	$E_{AS}$	21.7	mJ

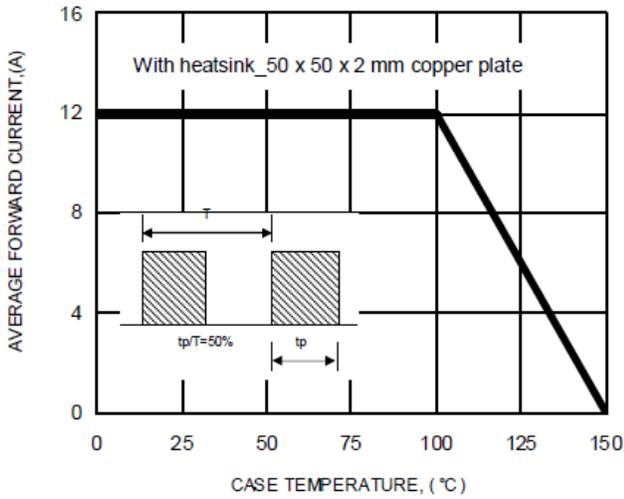
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	$R_{\theta JC}$	4	$^\circ\text{C}/\text{W}$
Typical Thermal Resistance Junction to Lead (Note 5)	$R_{\theta JL}$	6	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

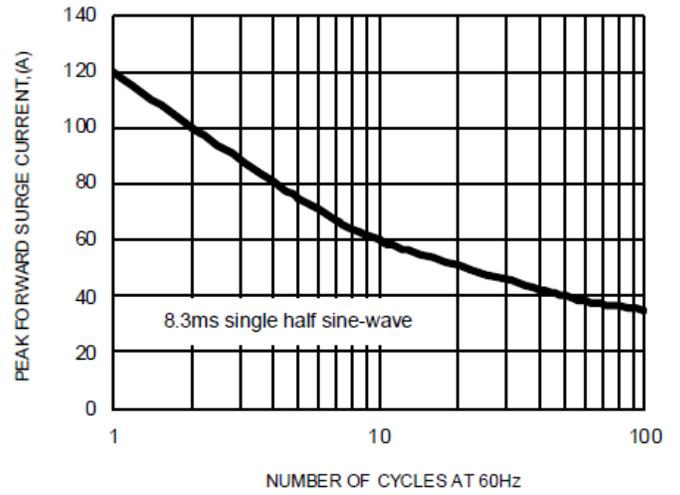
**Electrical Characteristics** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	600	—	—	V	$I_R = 45\mu\text{A}$
Forward Voltage (Note 7)	$V_F$	—	2.4	2.9	V	$I_F = 12\text{A}, T_J = +25^\circ\text{C}$
Reverse Leakage Current (Note 6)	$I_R$	—	0.2 30	45 600	$\mu\text{A}$ $\mu\text{A}$	$V_R = 600\text{V}, T_J = +25^\circ\text{C}$ $V_R = 600\text{V}, T_J = +125^\circ\text{C}$
Reverse Recovery Time	$t_{RR}$	—	—	30	ns	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{RR} = 0.25\text{A}$

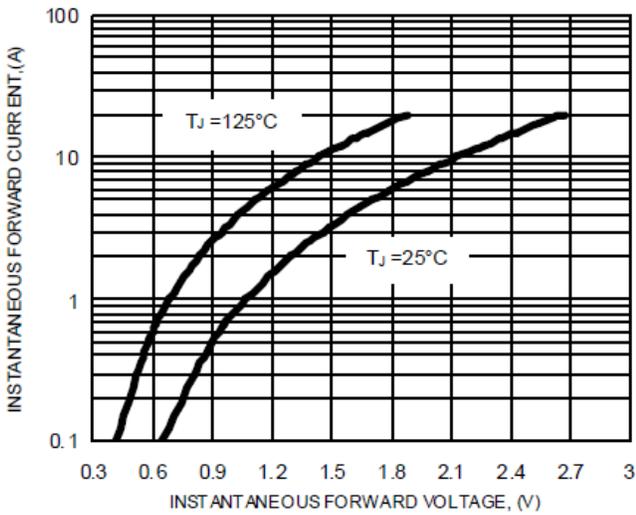
Notes: 5. Thermal resistance test performed in accordance with JESD-51. The  $R_{\theta JL}$  is measured at pin 2;  $R_{\theta JC}$  is measured at the top center of the body.  
6. Short duration pulse test used to minimize self-heating effect.  
7. 300 $\mu\text{s}$  pulse width, 2% duty cycle.



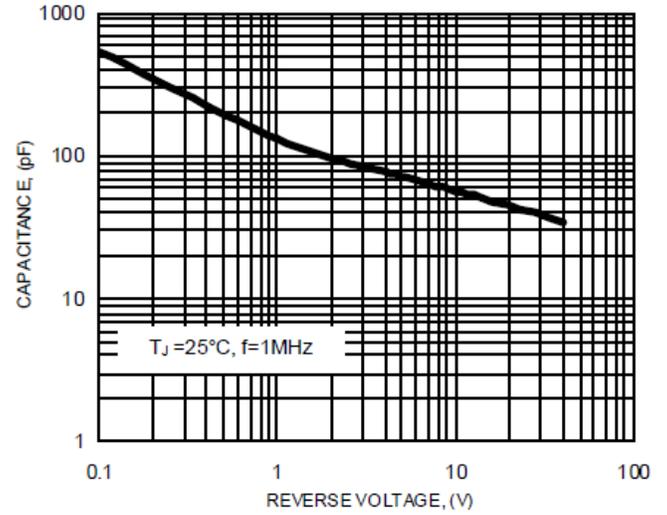
**FIG.1-FORWARD CURRENT DERATING CURVE**



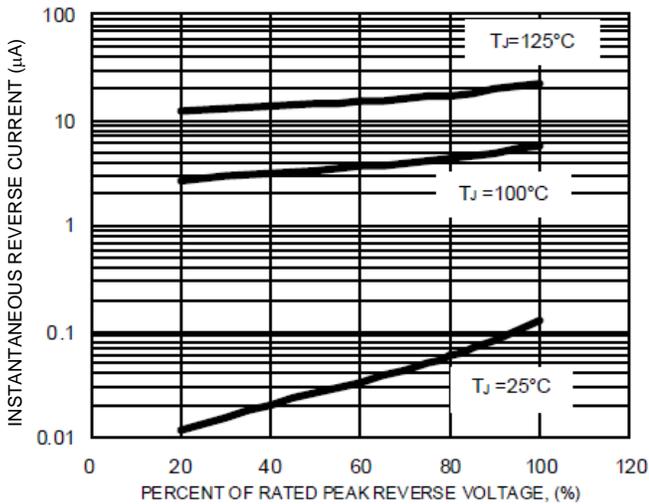
**FIG.2-MAXIMUM NON-REPETITIVE SURGE CURRENT**



**FIG.3-TYPICAL FORWARD CHARACTERISTICS**



**FIG.4-TYPICAL JUNCTION CAPACITANCE**

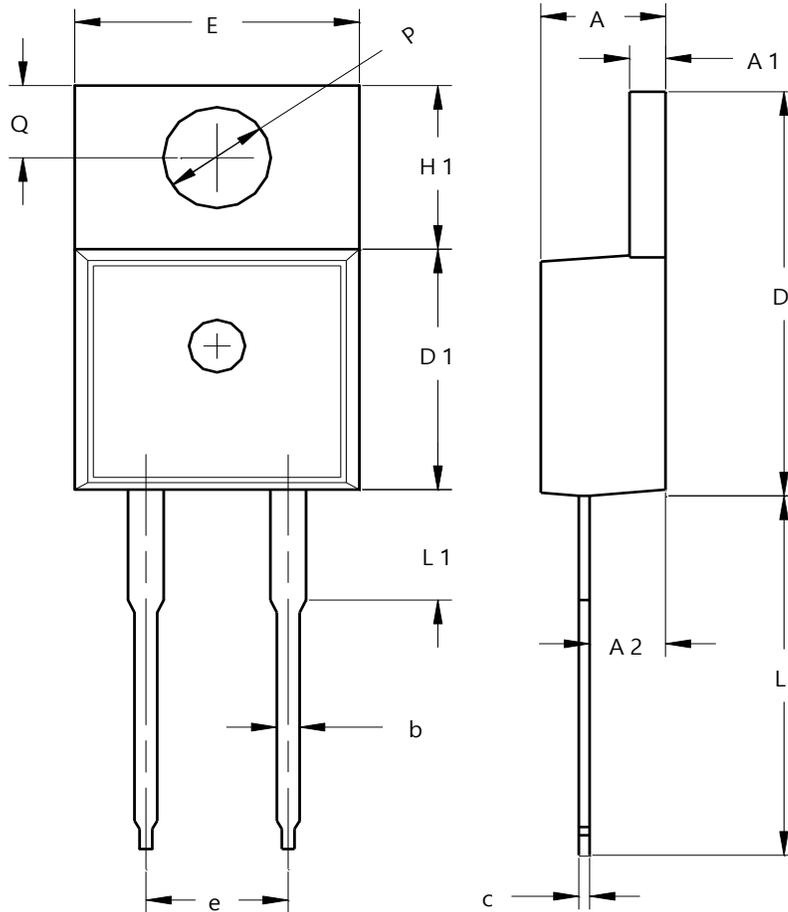


**FIG.5-TYPICAL REVERSE CHARACTERISTICS**

**Package Outline Dimensions**

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

**TO220AC (Type WX)**



TO220AC (Type WX)		
Dim	Min	Typ
A	3.56	4.83
A1	1.14	1.40
A2	2.03	2.92
b	0.51	1.14
c	0.30	0.64
D	14.40	15.20
D1	8.26	9.28
E	9.65	10.67
e	4.83	5.33
H1	5.84	6.86
L	12.70	14.73
L1	--	4.20
PØ	3.53	4.09
Q	2.54	3.43
All Dimensions in mm		

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