

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	t _{RR} (ns)
650	30	2.1	10	35

Description and Applications

Suitable for switching power supplies and power switching circuit applications and also in EV OBC, PFC diodes site & DC to DC, high power PSU, server power, PV inverter applications.

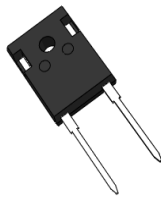
Features and Benefits

- Soft, Hyper Fast Switching Capability
- Specifically, Suited for Continuous-Conduction Mode Power Factor Correction
- High Reliability and Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- The DTHP30R07PTQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.
<https://www.diodes.com/quality/product-definitions/>

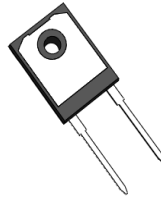
Mechanical Data

- Package: TO247-2
- 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 
- Polarity: See Diagram
- Weight: 5.9 grams (Approximate)

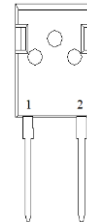
TO247-2 (Type WX)



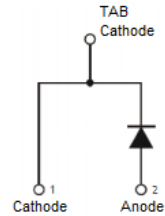
Top View



Bottom View



Top View Pinout



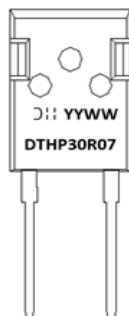
Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DTHP30R07PTQ	TO247-2 (Type WX)	30 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

TO247-2 (Type WX)



DTHP30R07 = Product Type Marking Code
 = Manufacturers' Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 25 for 2025)
 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	650	V
Average Rectified Output Current, @ $T_C = +120^{\circ}\text{C}$	I_O	30	A
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	320	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Notes 5, 6)	$R_{\theta JC}$	0.7	$^{\circ}\text{C/W}$
Typical Thermal Resistance Junction to Lead (Notes 5, 6)	$R_{\theta JL}$	0.6	$^{\circ}\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	650	725	—	V	$I_R = 100\mu\text{A}$
Forward Voltage (Note 8)	V_F	—	1.8 1.5	2.1 —	V	$I_F = 30\text{A}, T_J = +25^{\circ}\text{C}$ $I_F = 30\text{A}, T_J = +125^{\circ}\text{C}$
Reverse Leakage Current (Note 7)	I_R	—	— 20	10 200	μA μA	$V_R = 650\text{V}, T_J = +25^{\circ}\text{C}$ $V_R = 650\text{V}, T_J = +125^{\circ}\text{C}$
Reverse-Recovery Time	t_{RR}	—	27	35	ns	$I_F = 0.5\text{A}, I_R = 1.0\text{A},$ $I_{RR} = 0.25\text{A}$
Reverse-Recovery Current	I_{RM}	—	8.5	—	A	$I_F = 30\text{A}, dI_F/dt = 200\text{A}/\mu\text{s},$
Reverse-Recovery Charge	Q_{RR}	—	450	—	nC	$V_R = 400\text{V}$

Notes: 5. Thermal resistance test performed in accordance with JESD-51.
6. The unit mounted on fin-type heatsink 42mm*100mm*26.9mm.
7. Short duration pulse test used to minimize self-heating effect.
8. 300 μs pulse width, 2% duty cycle.

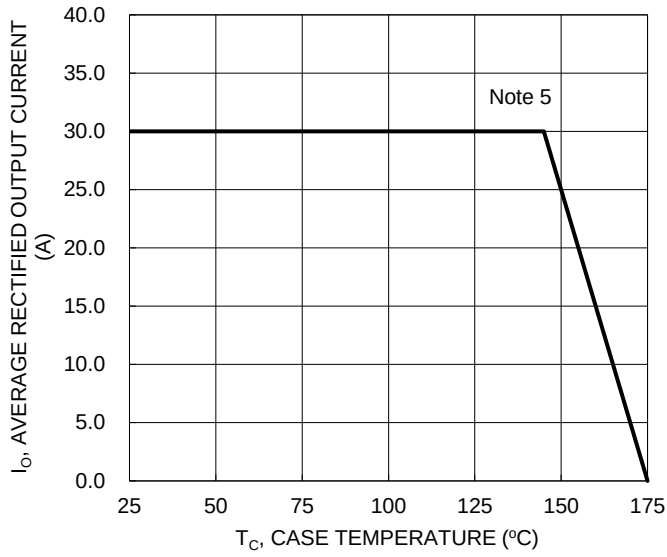


Figure 1. DC Forward Current Derating

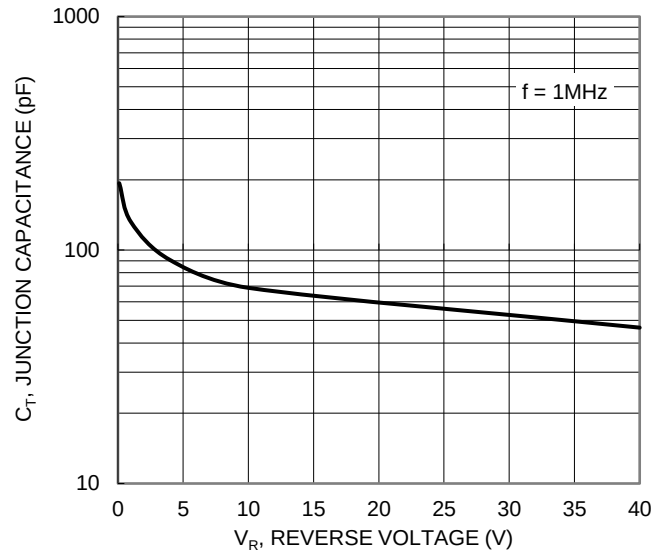


Figure 2. Typical Junction Capacitance

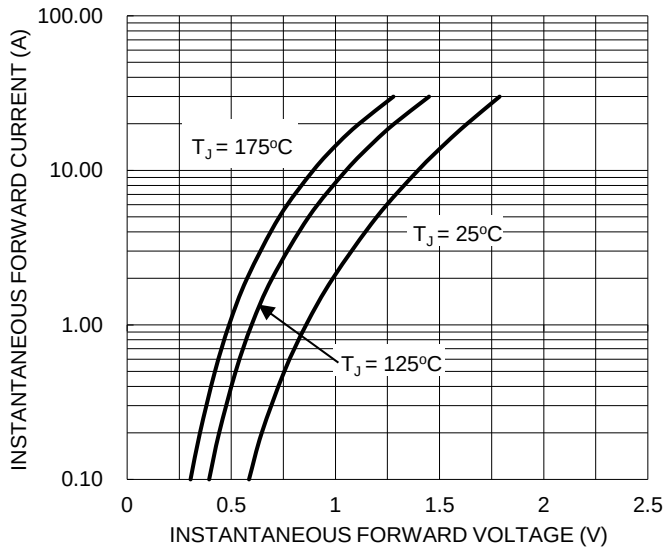


Figure 3. Typical Forward Characteristics

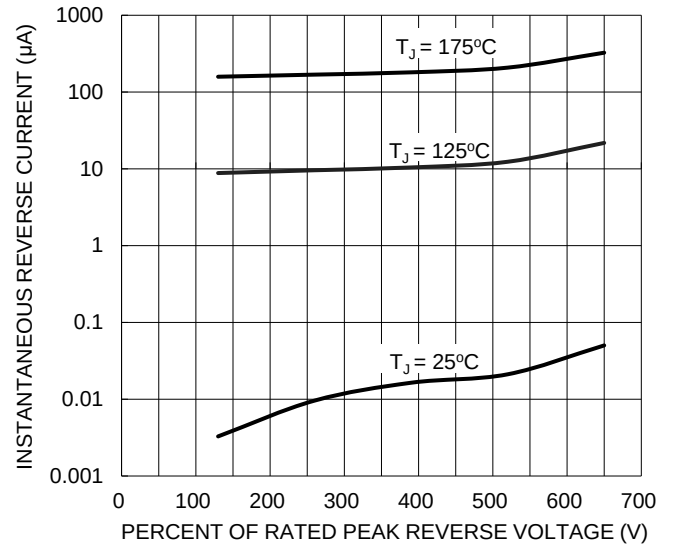
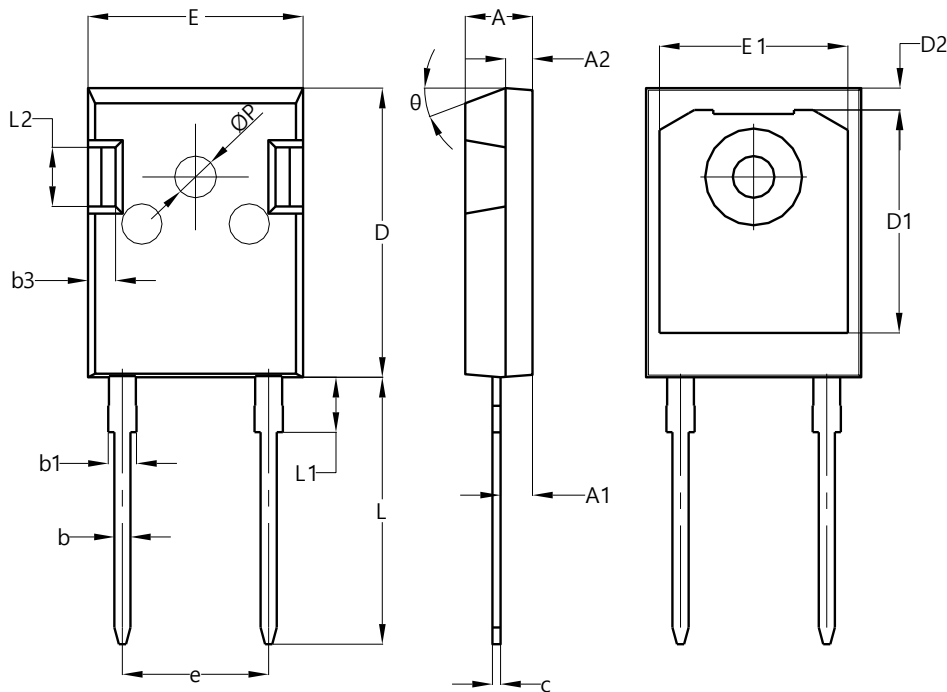


Figure 4. Typical Reverse Characteristics

Package Outline Dimensions

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

TO247-2 (Type WX)



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Dim	Min	Max	Typ
A	4.87	5.13	5.00
A1	2.10	2.40	2.38
A2	1.88	2.08	1.98
b	1.12	1.22	1.20
b1	1.90	2.16	2.00
b3	1.93	2.18	2.05
c	0.51	0.76	0.60
D	21.25	21.75	21.50
D1	--	--	16.58
D2	--	--	1.62
E	15.75	16.25	16.00
E1	--	--	14.02
e	10.60	11.10	10.88
L	19.60	20.10	19.85
L1	3.78	4.38	4.08
L2	--	--	4.40
ØP	2.90	3.20	3.10
θ	--	--	20°
All Dimensions in mm			

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