

Product Summary

V _{RRM} (V)	I _O (A)	V _F (MAX) (V) @ +25°C	I _R (Typ) (µA) @ +25°C
1200	5	1.7	41.5

Description and Applications

Packaged in the robust industry-standard ITO220AC (Type WX-NC) package, the DIODES™ DSC05120FP provides excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode:

- Power factor correction
- Industrial motor drivers
- Power inverters
- SMPS
- UPS

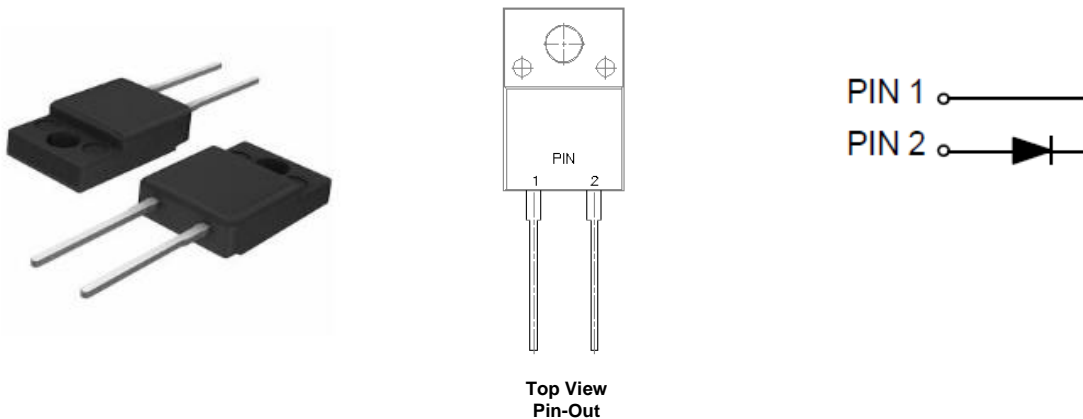
Features and Benefits

- Low Conduction and Switching Loss
- High Temperature Application
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current 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](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: ITO220AC
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 **e3**
- Weight: 1.497 grams (Approximate)

ITO220AC (Type WX-NC)

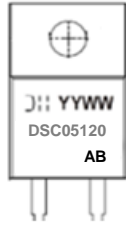


Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DSC05120FP	ITO220AC (Type WX-NC)	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



DSC05120 = Product Type Marking Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 22 = 2022)
 WW = Week (01 to 53)
 AB = Fab and Assembly Code

Maximum Ratings (@T_C = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage DC Blocking Voltage	V _{RRM} V _{DC}	1200	V
Average Rectified Output Current	I _O	5	A
Non-Repetitive Peak Forward Surge Current 10ms Half-Sine Wave Form	I _{FSM}	60	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Notes 5, 6)	R _{θJC}	5	°C/W
Typical Thermal Resistance, Junction to Lead (Notes 5, 6)	R _{θJL}	5	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

Notes: 5. Thermal resistance test performed in accordance with JESD-51.
 6. The unit mounted on copper heatsink (100mm x 100mm x 2mm)

Electrical Characteristics (@T_C = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Voltage	V _{BR}	1200	—	—	V	I _R = 0.19mA
Forward Voltage Drop	V _F	—	1.42 1.94	1.7 2.6	V	I _F = 5A, T _J = +25°C I _F = 5A, T _J = +175°C
Leakage Current	I _R	—	41.5 400	190 —	μA	V _R = 1200V, T _J = +25°C V _R = 1200V, T _J = +175°C
Total Capacitive Charge	Q _C	—	18	—	nC	I _F = 5A, dI/dt = 200A/μs, V _R = 400V, T _J = +25°C
Total Capacitance	C _T	—	318 255 70	— — —	pF	V _R = 0.1V, T _J = +25°C, f = 1MHz V _R = 1V, T _J = +25°C, f = 1MHz V _R = 40V, T _J = +25°C, f = 1MHz

FIG.1 FORWARD CURRENT DERATING CURVE

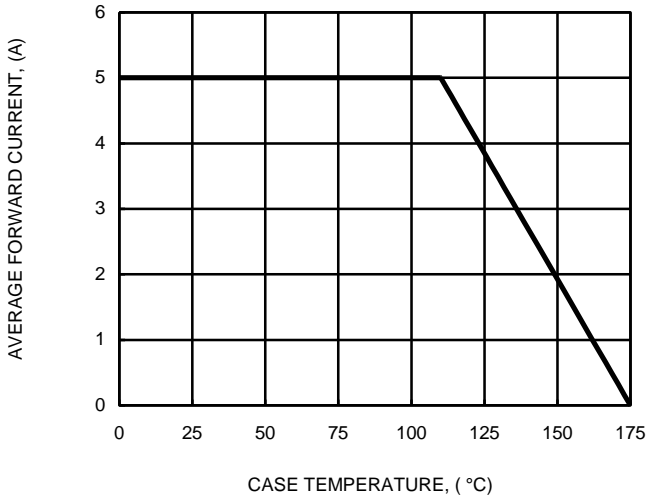


FIG.2 NON-REPETITIVE PEAK SURGE FORWARD CURRENT

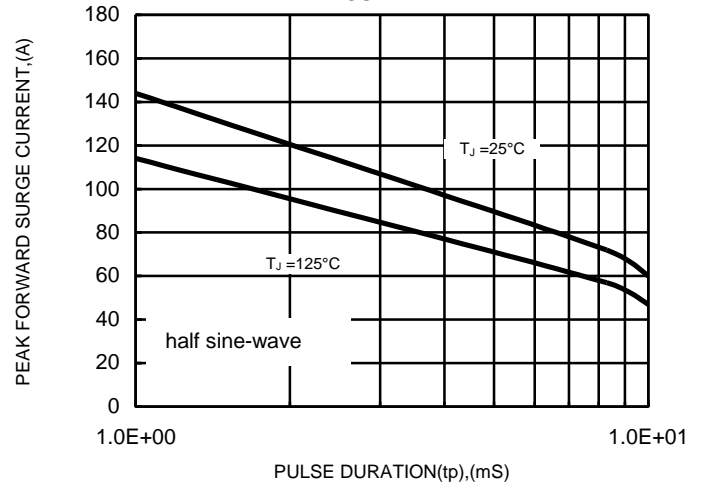


FIG.3 TYPICAL FORWARD CHARACTERISTICS

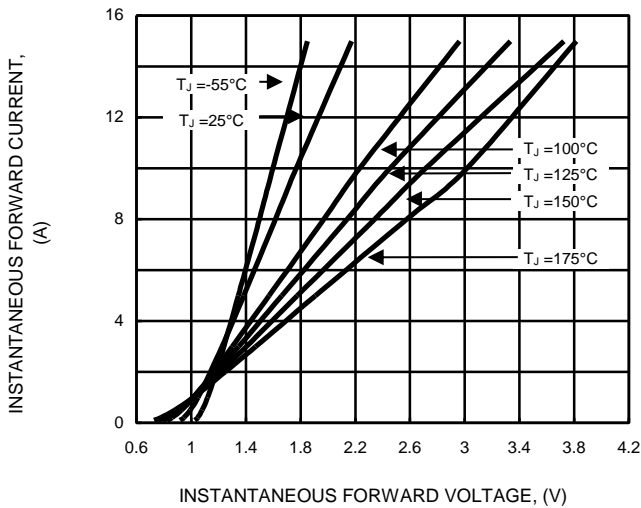


FIG.4 TYPICAL JUNCTION CAPACITANCE

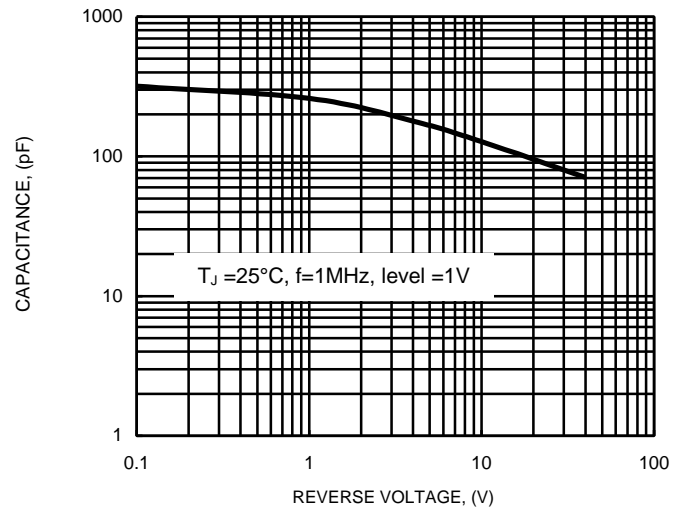


FIG.5 TYPICAL REVERSE CHARACTERISTICS

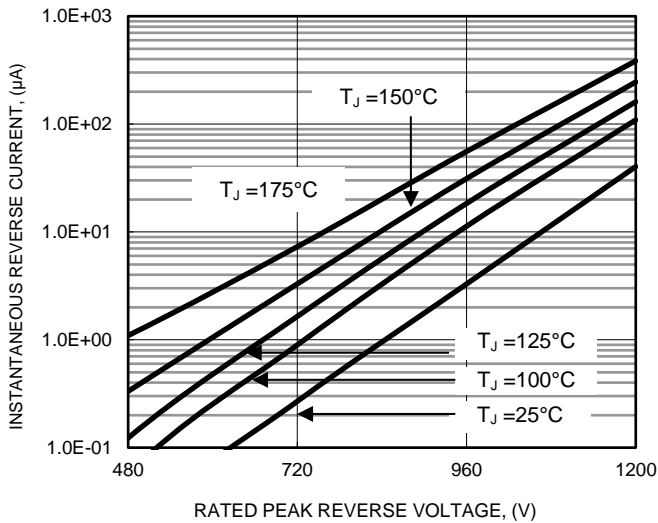
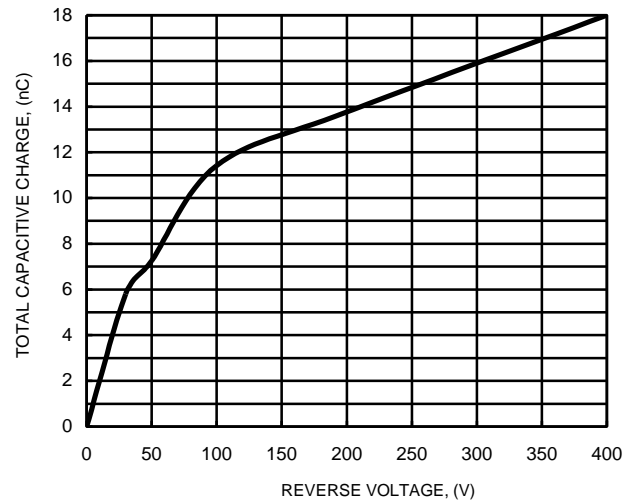


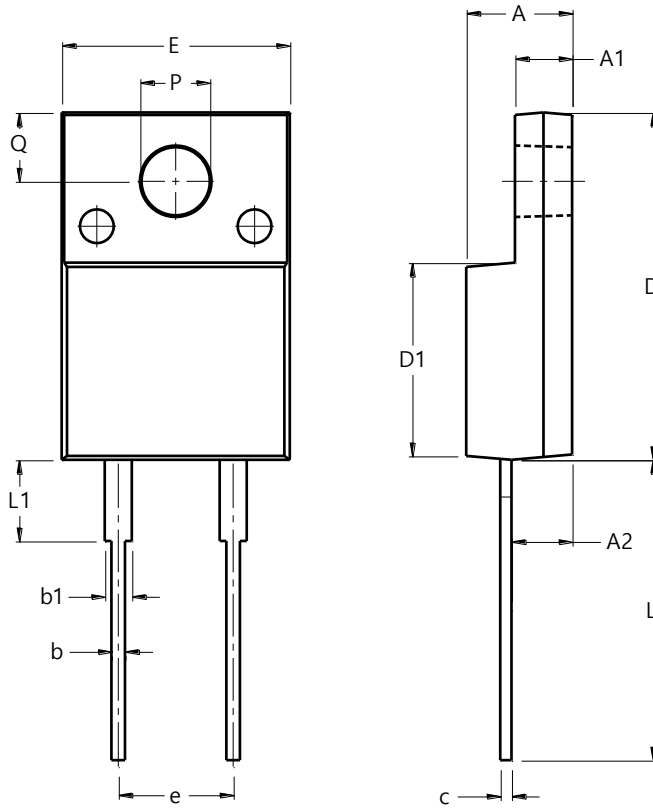
FIG.6 TYPICAL CAPACITIVE CHARGES



Package Outline Dimensions

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

ITO220AC (Type WX-NC)



ITO220AC (Type WX-NC)		
Dim	Min	Max
A	4.46	4.87
A1	2.48	2.80
A2	2.50	2.80
b	0.50	0.80
b1	1.15	1.70
c	0.45	0.70
D	14.95	15.95
D1	8.50	8.80
E	10.00	10.40
e	4.95	5.25
L	13.00	13.70
L1	3.30	3.90
Q	2.76	3.36
P \varnothing	3.00	3.30
All Dimensions in mm		

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