

Product Summary

V_{RRM} (V)	I_O (A)	V_F (Max) (V) @ +25°C	I_R (Typ) (μA) @ +25°C
650	8	1.5	0.1

Description and Applications

Packaged in the robust industry-standard DFN8080 package, the DSC08A065LP provides excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode, or blocking diode in:

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

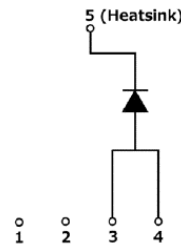
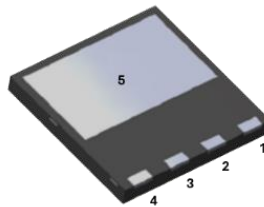
Features and Benefits

- Low Conduction and Switching Loss
- High-Temperature Application
- Positive Temperature Coefficient on V_F
- Fast Reverse Recovery
- High Surge Current Capability
- **Totally Lead-Free & Fully 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/>

Mechanical Data

- Package: DFN8080
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 
- Weight: 0.214 grams (Approximate)

DFN8080

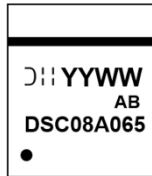


Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DSC08A065LP-13	DFN8080	2,500	Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 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



DSC08A065LP = Manufacturer's Marking
 DSC08A065 = Product Type Marking Code
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 24 = 2024)
 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	V _{RRM}	650	V
DC Blocking Voltage	V _{DC}	650	V
Average Rectified Output Current	I _O	8	A
Non-Repetitive Peak Forward Surge Current 10ms Half Sine Waveform	I _{FSM}	47	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Notes 5, 6, 7)	R _{θJC}	1.36	°C/W
Typical Thermal Resistance, Junction to Ambient (Notes 5, 6, 7)	R _{θJA}	4.25	°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 71.5mm x 12mm x 0.26mm.
 7. Device mounted on 1inch² copper pad, 2oz. The heat generated must be less than the thermal conductivity from junction to case: dP_D/dT_J < 1/R_{θJC} or junction to ambient: dP_D/dT_J < 1/R_{θJA}.

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Voltage	V _{BR}	650	—	—	V	I _R = 0.1mA
Forward Voltage Drop	V _F	—	1.33 1.62	1.50 2.25	V	I _F = 8A, T _J = +25°C I _F = 8A, T _J = +175°C
Leakage Current	I _R	—	0.10 2.85	20 160	μA	V _R = 650V, T _J = +25°C V _R = 650V, T _J = +175°C
Total Capacitive Charge	Q _C	—	12	—	nC	I _F = 8A, di/dt = 200A/μs, V _R = 400V, T _J = +25°C
Total Capacitance	C _T	—	414 316 78	—	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

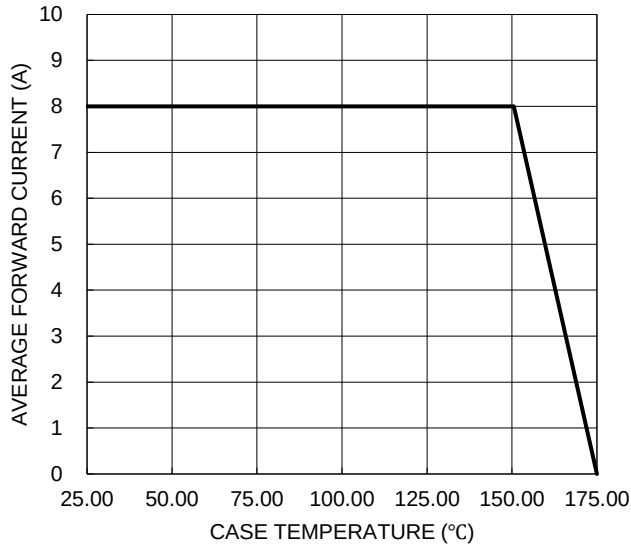


Figure 1. Forward Current Derating Curve

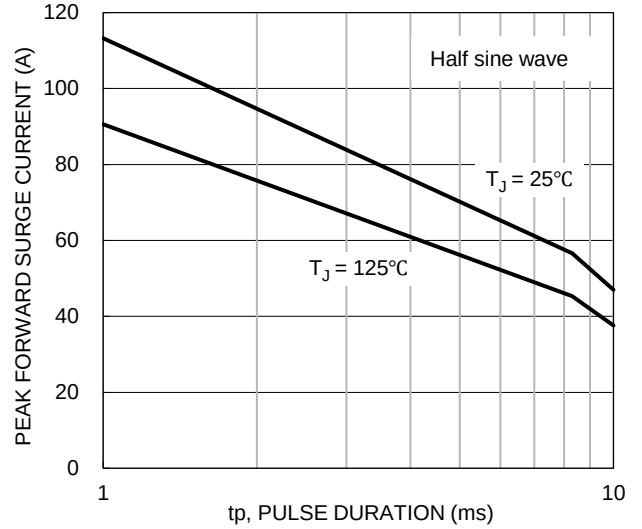


Figure 2. Non-Repetitive Peak Surge Forward Current

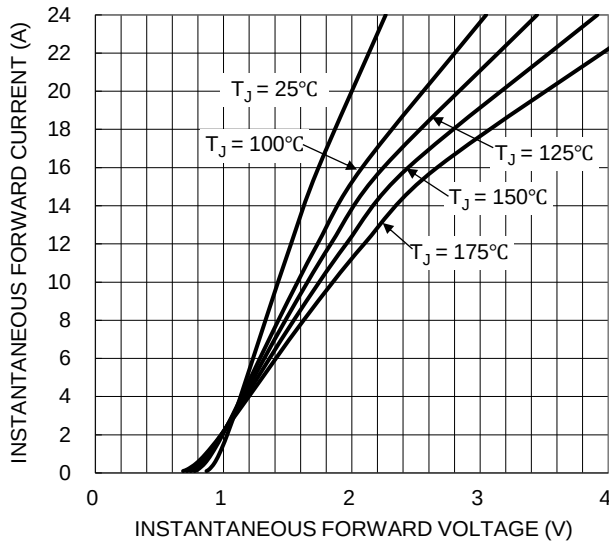


Figure 3. Typical Forward Characteristics

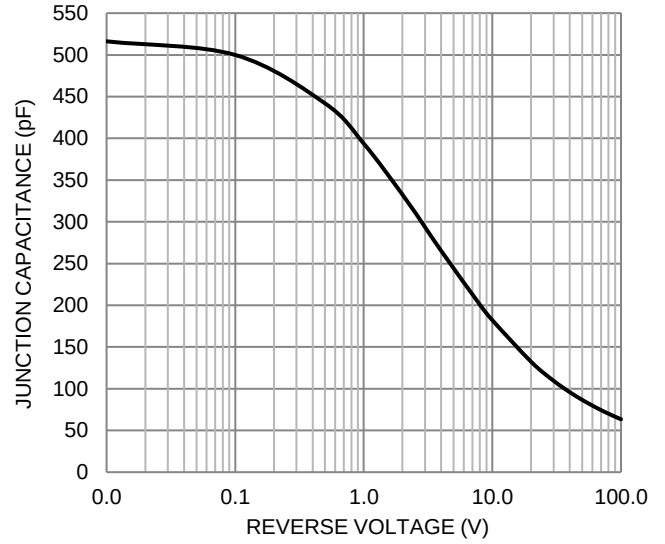


Figure 4. Typical Junction Capacitance

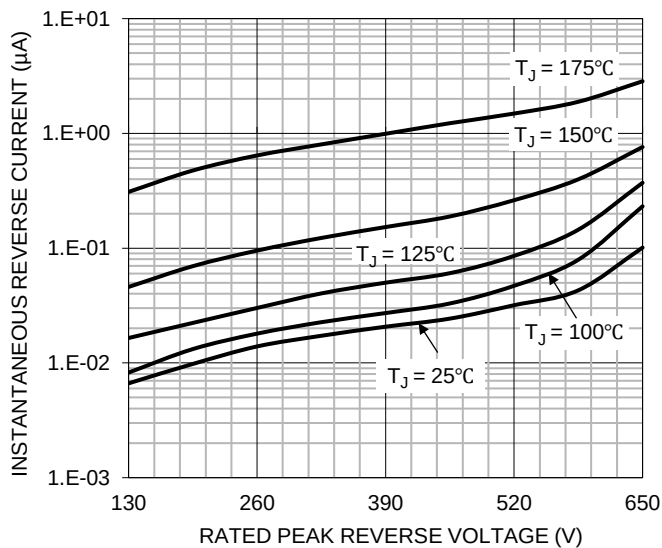


Figure 5. Typical Reverse Characteristics

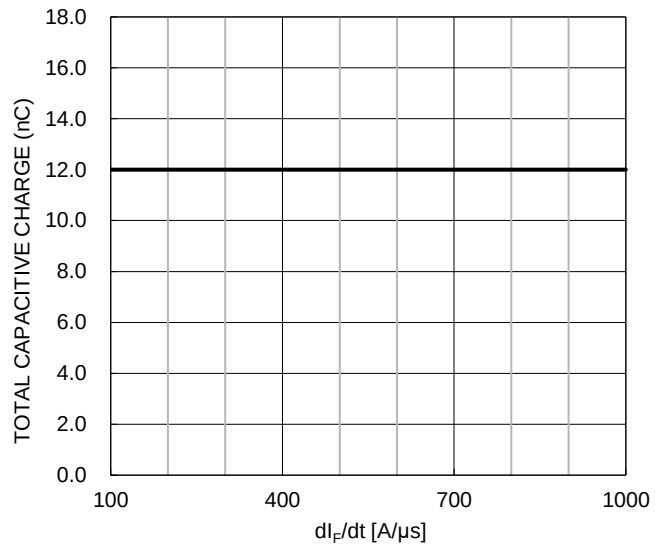
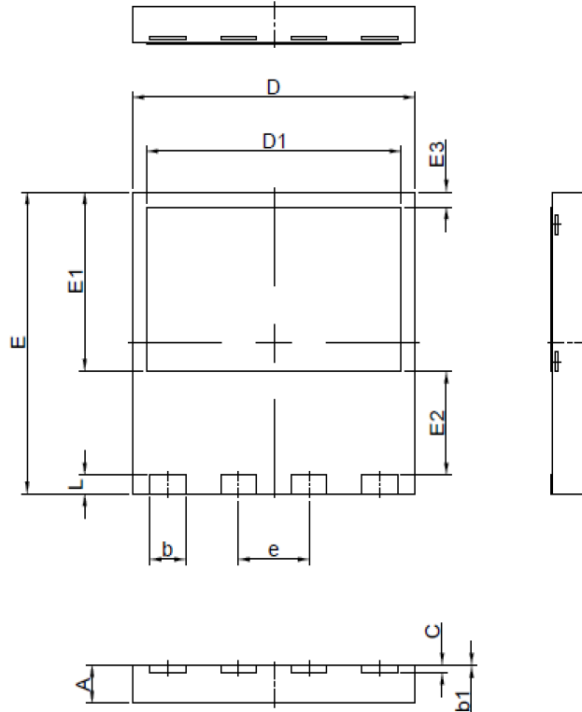


Figure 6. Typical Capacitive Charges vs. Current Slope

Package Outline Dimensions

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

DFN8080

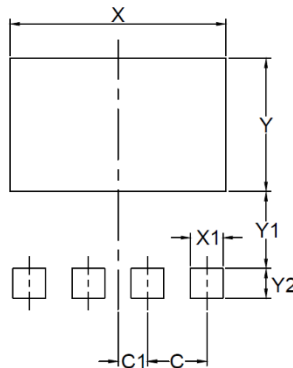


DFN8080			
DIM.	MIN.	MAX.	TYP.
A	0.90	1.10	1.00
b	0.90	1.10	1.00
b1	0	0.05	0.02
C	0.20 REF.		
D	7.90	8.10	8.00
D1	7.10	7.30	7.20
E	7.90	8.10	8.00
E1	4.65	4.85	4.75
E2	2.65	2.85	2.75
E3	0.30	0.50	0.40
e	2.0 BSC		
L	0.40	0.60	0.50
All Dimension in millimeter			

Suggested Pad Layout

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

DFN8080



Dim.	Millimeters
	DFN8080
C	2.0
C1	1.0
X	7.3
X1	1.1
Y	4.5
Y1	2.6
Y2	1.0

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