

**Product Summary** @ $T_A = +25^\circ\text{C}$ 

$V_{RRM}$ (V)	$I_o$ (A)	$V_F$ Max (V)	$I_R$ Max ( $\mu\text{A}$ )
800	5	0.99	10

**Features and Benefits**

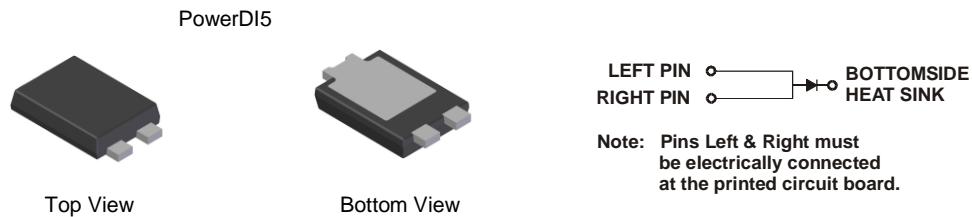
- Glass Passivated Die Construction
- Low Leakage Current
- **Lead Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured 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**

The DIODES™ S5KP5M is a 5.0A glass-passivated rectifier in the PowerDI®5 package and offers high-surge current capability and low-leakage current. The S5KP5M is a lead-free finish, RoHS compliant, "Green" device.

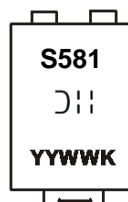
**Mechanical Data**

- Package: PowerDI5
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Diagram
- Weight: 0.096 grams (Approximate)


**Ordering Information** (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
S5KP5M-13	PowerDI5	5000	Tape & Reel

- 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**


- S581 = Product Type Marking Code
- ⌋⌋ = Manufacturer's Marking
- YYWW = Date Code Marking
- YY = Last Two Digits of Year (ex: 22 for 2022)
- WW = Week Code 01 to 52
- K = Factory Designator

**Maximum Ratings** (@T<sub>A</sub> = +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 <sub>RRM</sub>	800	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
Average Rectified Output Current	I <sub>O</sub>	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	200	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	2	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	23	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V <sub>F</sub>	—	0.91	0.99	V	I <sub>F</sub> = 5A, T <sub>S</sub> = +25°C I <sub>F</sub> = 5A, T <sub>S</sub> = +125°C
Reverse Leakage Current (Note 6)	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> = 800V, T <sub>J</sub> = +25°C
		—	—	0.3	mA	V <sub>R</sub> = 800V, T <sub>J</sub> = +125°C
Typical Reverse Recovery Time	t <sub>RR</sub>	—	3	—	μs	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A I <sub>RR</sub> = 0.25A
Total Capacitance	C <sub>T</sub>	—	50	—	pF	V <sub>R</sub> = 4.0V <sub>DC</sub> , f = 1MHz

Notes: 5. Device mounted on 2inch x 2inch Al board.  
6. Short duration pulse test used to minimize self-heating effect.

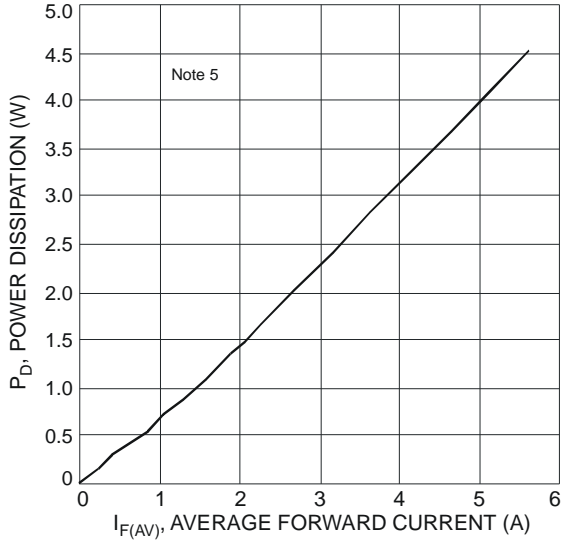


Figure 1. Forward Power Dissipation

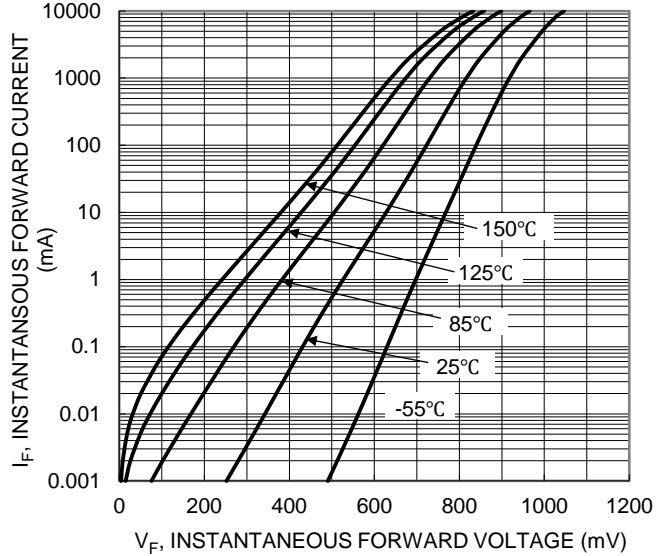


Figure 2. Typical Forward Characteristics

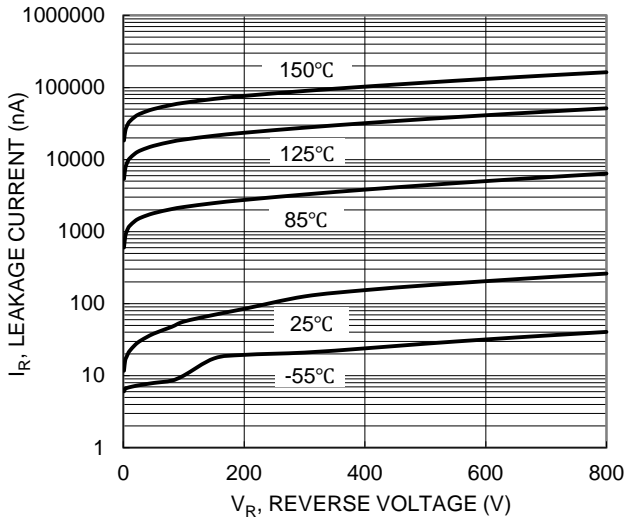


Figure 3. Typical Reverse Characteristics

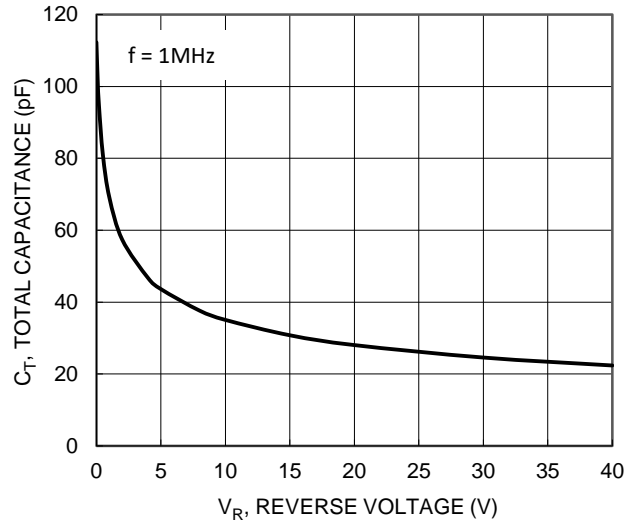


Figure 4. Typical Total Capacitance

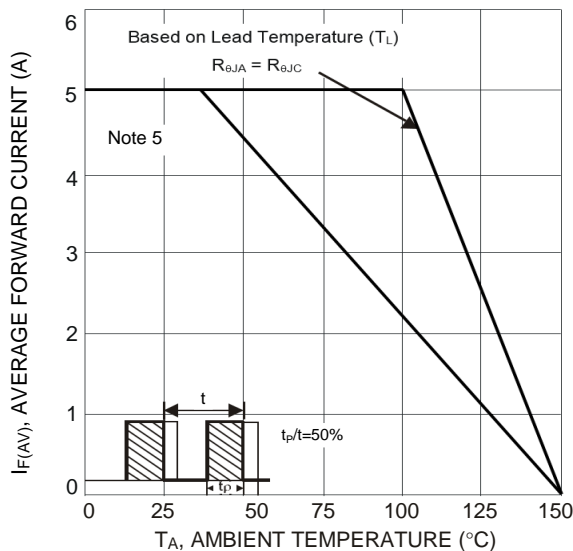


Figure 5. Forward Current Derating Curve

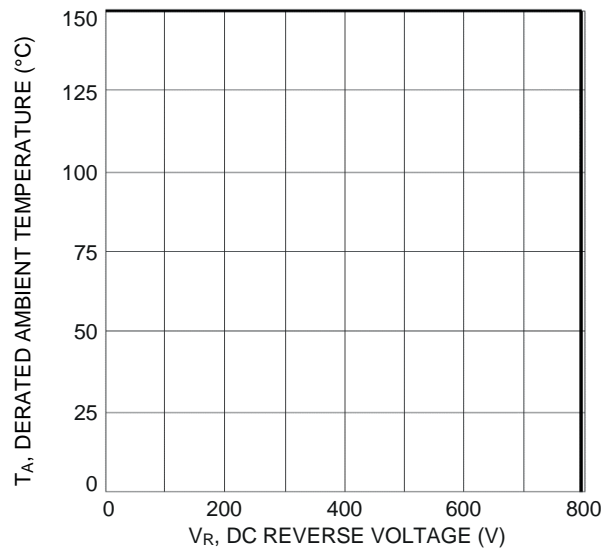
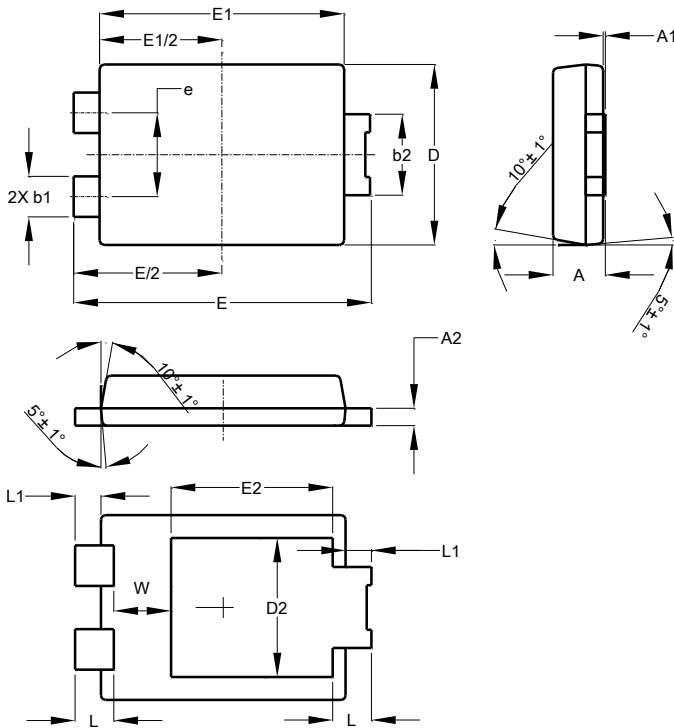


Figure 6. Operating Temperature Derating

## Package Outline Dimensions

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

**PowerDI5**

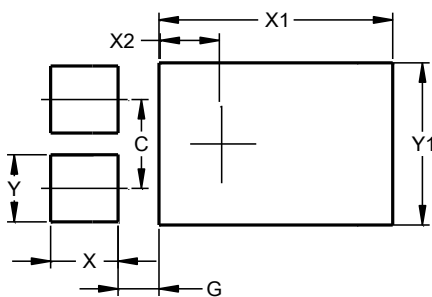


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.51
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

## Suggested Pad Layout

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

**PowerDI5**



Dimensions	Value (in mm)
C	1.840
G	0.852
X	1.400
X1	4.860
X2	1.310
Y	1.390
Y1	3.360

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