

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

V <sub>RRM</sub> (V)	I <sub>o</sub> (A)	V <sub>F</sub> Max (V)	I <sub>R</sub> Max (μA)
100	8	0.85	1.5

### Description and Applications

The SDM8M100P5 is a single rectifier packaged in PowerDI<sup>®</sup>5, offering very low forward voltage drop (V<sub>F</sub>) and excellent low reverse leakage stability at high temperatures. It is ideally suited for use as:

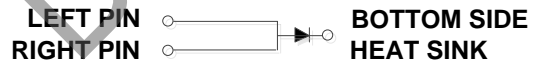
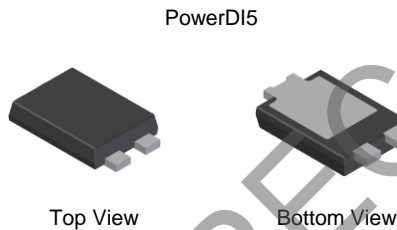
- Polarity Protection Diode
- Re-Circulating Diode
- Switching Diode

### Features and Benefits

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- +175°C Operating Junction Temperature
- **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-Q101, 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

- Case: PowerDI5
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: See Diagram Below
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 @3
- Weight: 0.093 grams (Approximate)



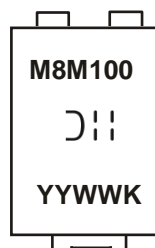
**Note: Pins Left & Right must be electrically connected at the printed circuit board.**

### Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
SDM8M100P5-13	Commercial	PowerDI5	5,000/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



M8M100 = Product Type Marking Code  
 ⤴⤵ = Manufacturers' Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 19 for 2019)  
 WW = Week Code (01 to 53)  
 K = Factory Designator

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub>	100	V
Average Rectified Output Current	I <sub>O</sub>	8	A
Non-Repetitive Peak Forward Surge Current 8.3ms	I <sub>FSM</sub>	160	A
Non-Repetitive Avalanche Energy at I <sub>AS</sub> = 3.0A, L = 50mH	E <sub>AS</sub>	210	mJ

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	20	°C/W
Typical Thermal Resistance Junction to Case (Note 5)	R <sub>θJC</sub>	3	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.73	—	V	I <sub>F</sub> = 4A, T <sub>J</sub> = +25°C
		—	0.78	0.85		I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C
		—	0.58	—		I <sub>F</sub> = 4A, T <sub>J</sub> = +125°C
		—	0.64	0.74		I <sub>F</sub> = 8A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	0.1	1.5	μA mA	V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C
		—	0.15	2.0		V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C
Junction Capacitance	C <sub>J</sub>	—	168	—	pF	V <sub>R</sub> = 4V, T <sub>J</sub> = +25°C

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

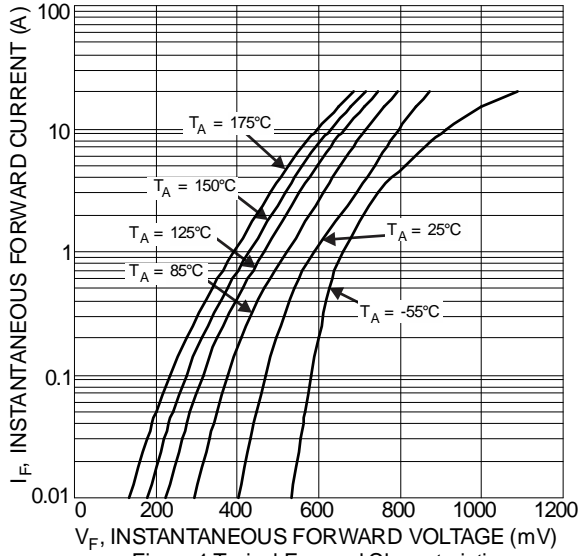


Figure 1 Typical Forward Characteristics

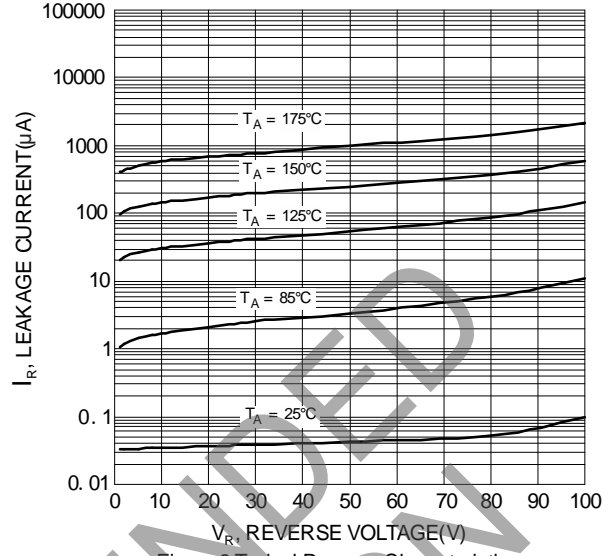


Figure 2 Typical Reverse Characteristics

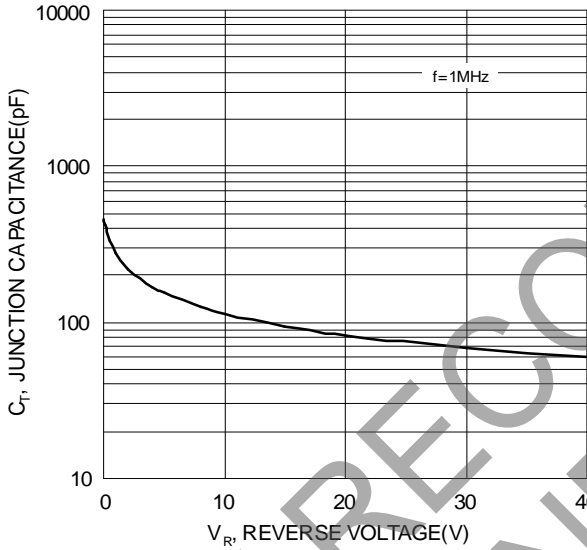


Figure 3 Typical Junction Capacitance

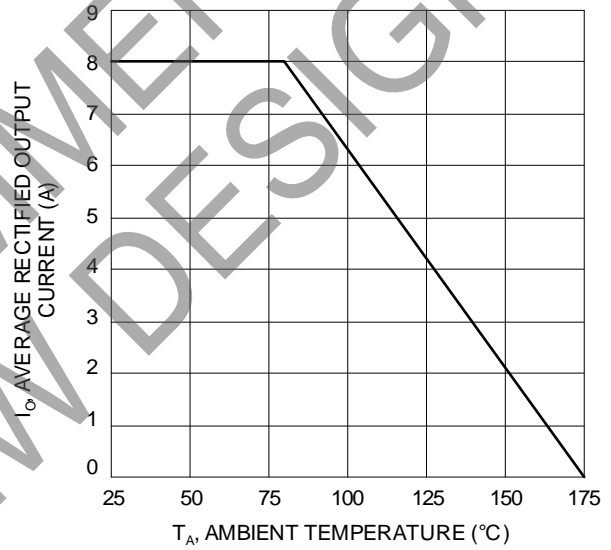


Figure 4 DC Forward Current Derating

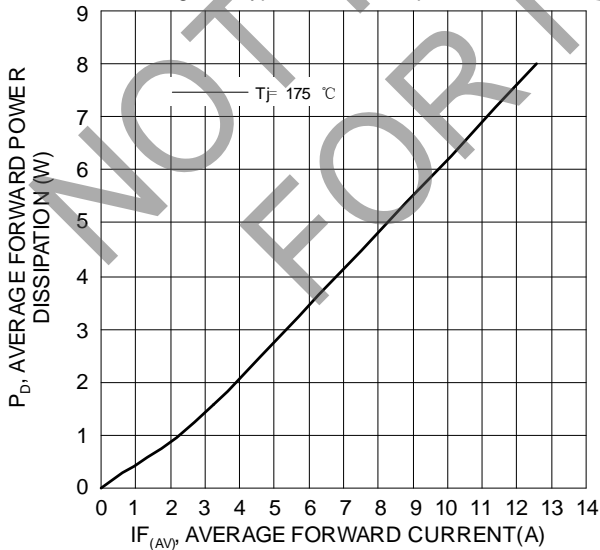
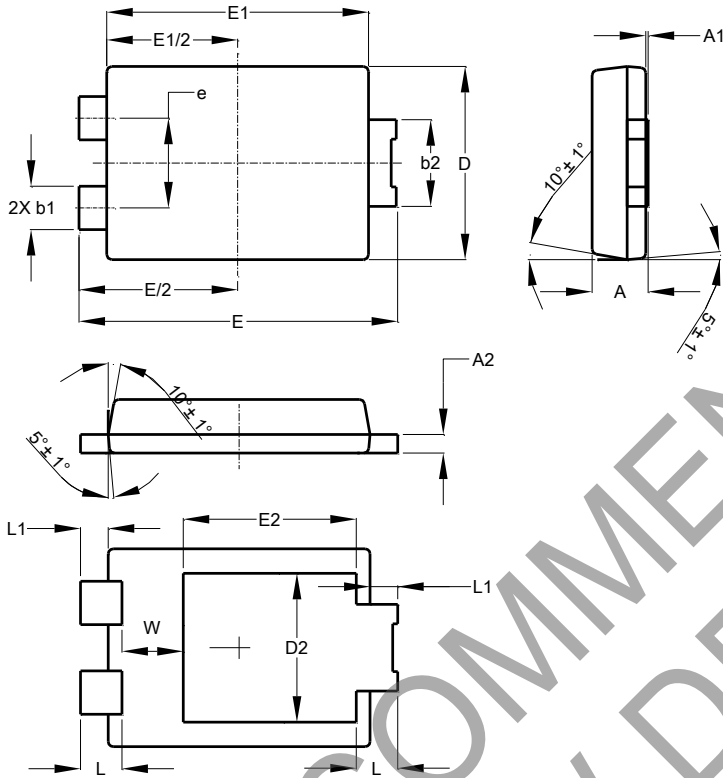


Figure 5 Forward Power Dissipation

**Package Outline Dimensions**

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

**PowerDI5**

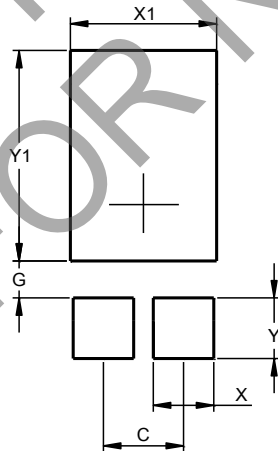


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.504
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

**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	1.390
X1	3.360
Y	1.400
Y1	4.860

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