

Product Summary

V_{RRM} (V)	I_O (A)	V_F (MAX) (V) @ +25°C	I_R (MAX) (μ A) @ +25°C
40	1	0.59	20

Features and Benefits

- Reduced Ultra-Low Forward Voltage Drop (V_F). Better Efficiency and Cooler Operation.
- Reduced High Temperature Reverse Leakage. Increased Reliability Against Thermal Runaway Failure In High Temperature Operation.
- **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-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q- suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>

Description and Applications

Packaged in the robust industry-standard U-DFN1608-2 package, the DIODES SDM1A40LP8 provides very low V_F and excellent reverse-leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode, or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors

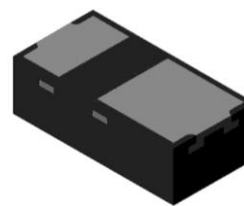
Mechanical Data

- Case: U-DFN1608-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.002 grams (Approximate)

U-DFN1608-2



Top View



Bottom View

Cathode Side

Ordering Information (Note 4)

Part Number	Case	Packaging
SDM1A40LP8-7	U-DFN1608-2	10,000/Tape & 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/>.

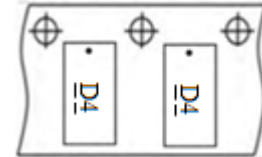
Marking Information

U-DFN1608-2



D 4 = Product Type Marking Code

Dot Denotes Cathode Side



Maximum Ratings (@ T_A = +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 _R RM	40	V
Working Peak Reverse Voltage	V _R WM		
DC Blocking Voltage	V _R RM		
Average Rectified Output Current	I _O	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	7	A
Repetitive Peak Forward Current (t _p = 1ms, Duty Cycle = 25%)	I _{FRM}	5	A

Thermal Characteristics (Per Leg)

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5)	R _{θJA}	100	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Electrical Characteristics (Per Leg) (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Note 6)	V _F	—	0.44	0.51	V	I _F = 0.5A, T _J = +25°C
		—	0.36	—		I _F = 0.5A, T _J = +125°C
		—	0.51	0.59		I _F = 1A, T _J = +25°C
		—	0.46	—		I _F = 1A, T _J = +125°C
Leakage Current (Note 6)	I _R	—	0.6	—	μA	V _R = 10V, T _J = +25°C
		—	5	20		V _R = 40V, T _J = +25°C
		—	2.3	—		mA
Reverse Recovery Time	t _{RR}	—	14	—	ns	I _F = 10mA, I _{RRM} = 0.1I _R , T _A = +25°C
Total Capacitance	C _T	—	69	—	pF	V _R = 1V, f = 1MHz

 Notes: 5. Test with FR-4 PC board 1-inch sq. copper pad, 2oz.
 6. Short duration pulse test used to minimize self-heating effect.

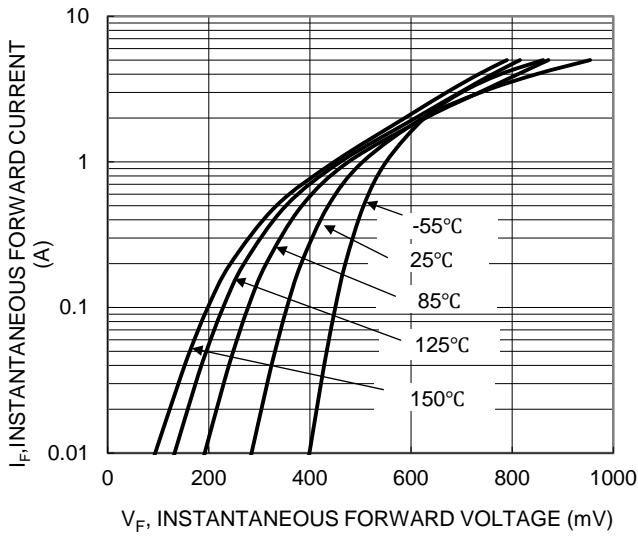


Figure 1. Typical Forward Characteristics

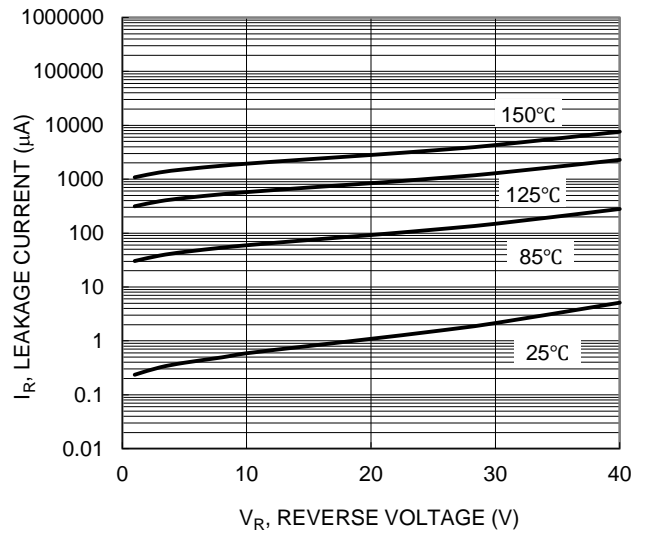


Figure 2. Typical Reverse Characteristics

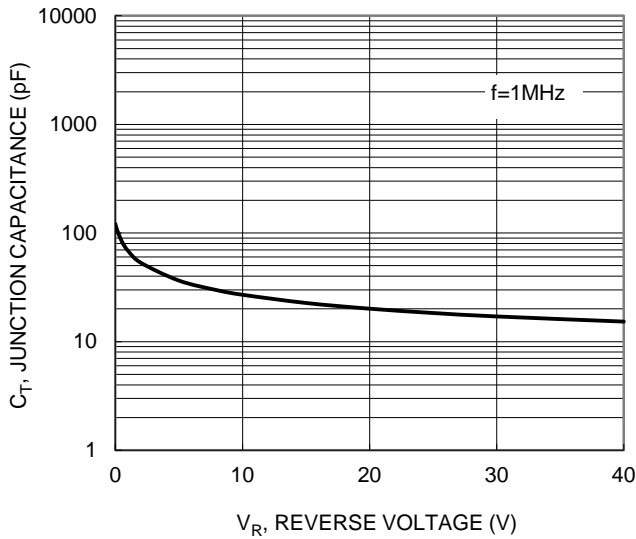


Figure 3. Typical Junction Capacitance

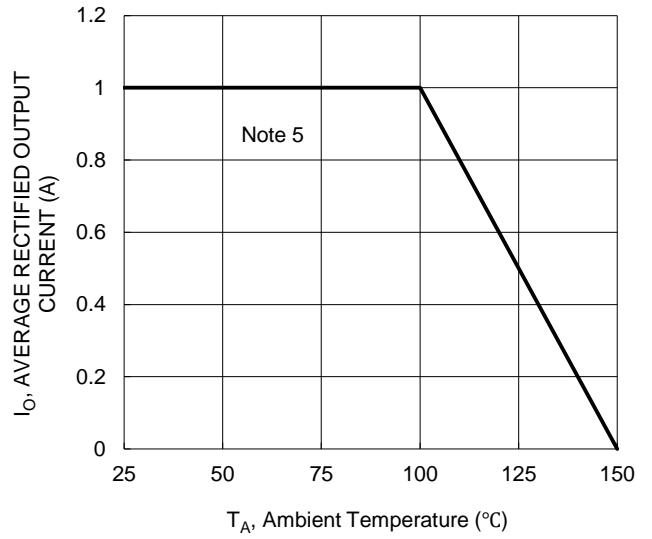


Figure 4. DC Forward Current Derating Curve

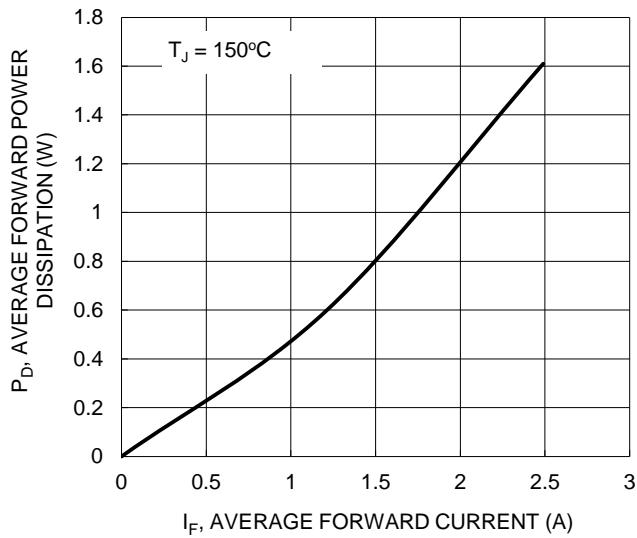
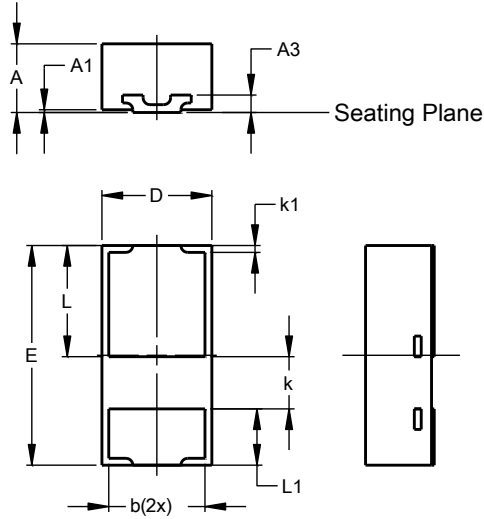


Figure 5. Forward Power Dissipation

Package Outline Dimensions

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

U-DFN1608-2

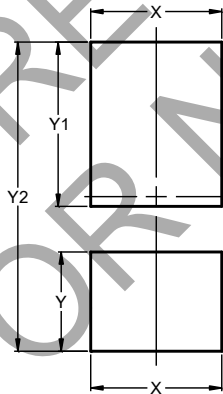


U-DFN1608-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.02
A3	-	-	0.127
b	0.65	0.75	0.70
D	0.75	0.85	0.80
E	1.55	1.65	1.60
k	0.38 BSC		
k1	0.05 BSC		
L	0.76	0.86	0.81
L1	0.36	0.46	0.41
All Dimensions in mm			

Suggested Pad Layout

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

U-DFN1608-2



Dimensions	Value (in mm)
X	0.800
Y	0.610
Y1	1.010
Y2	1.900

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