

Product Summary

V_{RRM} (V)	I_O (A)	V_F (MAX) (V) @ +25°C	I_R (MAX) (mA) @ +25°C
40	1	0.66	0.02

Description and Applications

Packaged in the robust industry-standard U-DFN1608-2 package, the SDM1M40LP8 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

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/>

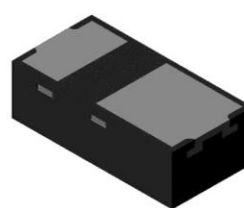
Mechanical Data

- 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: Finish - NiPdAu over Copper Leadframe. Solderable per MIL-STD-202, Method 208 **Ⓔ4**
- Weight: 0.002 grams (Approximate)

U-DFN1608-2



Top View



Cathode Side

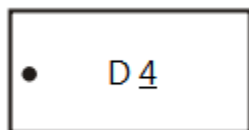
Bottom View

Ordering Information (Note 4)

Part Number	Case	Packaging
SDM1M40LP8-7	U-DFN1608-2	10,000/Tape & Reel

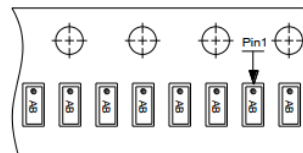
- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- 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



D4 = Product Type Marking Code

Dot Denotes Cathode Side



Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	40	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_{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}	8	A
Repetitive Peak Forward Current ($t_p = 1\text{ms}$, duty cycle = 25%)	I_{FRM}	5	A

Thermal Characteristics (Per Leg)

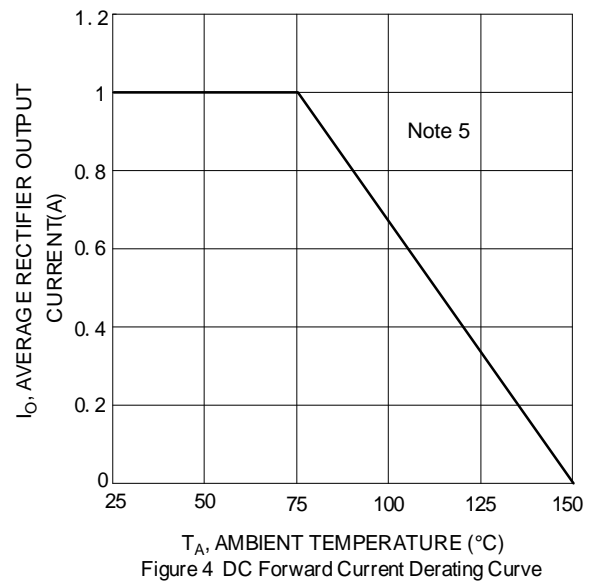
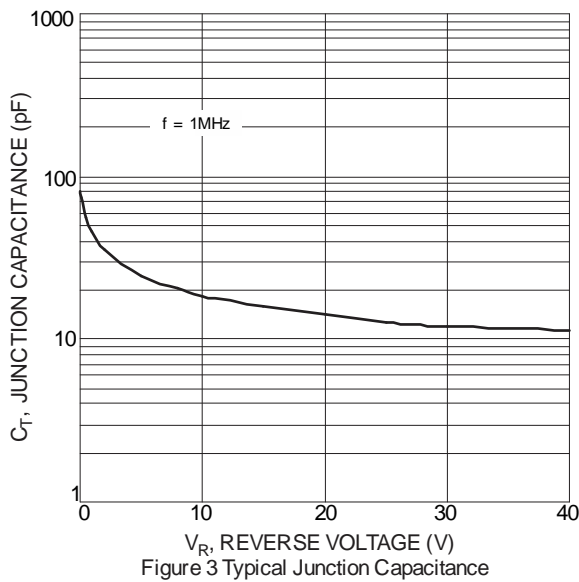
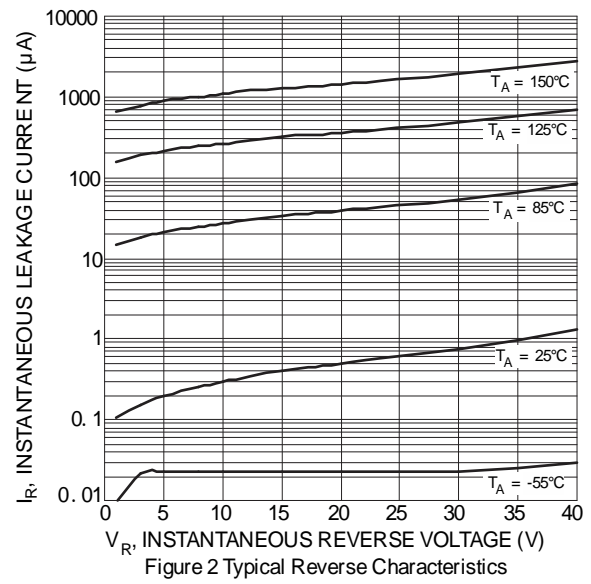
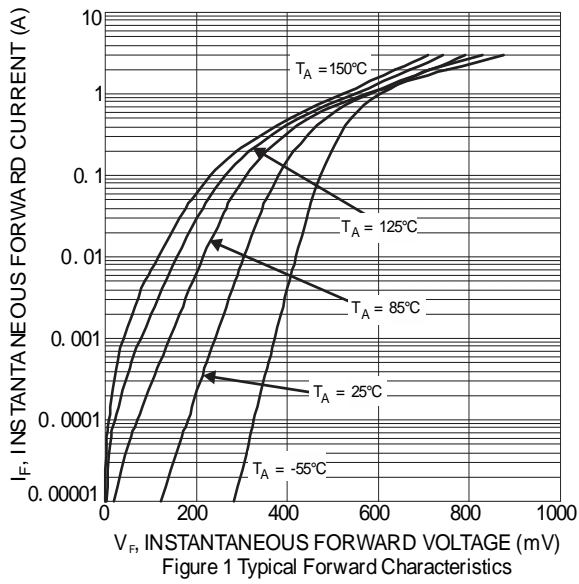
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{\theta JA}$	130	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical Characteristics (Per Leg) (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Note 6)	V_F	—	0.49	0.56	V	$I_F = 0.5\text{A}, T_J = +25^\circ\text{C}$
		—	0.42	—		$I_F = 0.5\text{A}, T_J = +125^\circ\text{C}$
		—	0.59	0.66		$I_F = 1\text{A}, T_J = +25^\circ\text{C}$
		—	0.55	—		$I_F = 1\text{A}, T_J = +125^\circ\text{C}$
Leakage Current (Note 6)	I_R	—	0.0006	0.004	mA	$V_R = 10\text{V}, T_J = +25^\circ\text{C}$
		—	0.002	0.02		$V_R = 40\text{V}, T_J = +25^\circ\text{C}$
		—	0.80	—		$V_R = 40\text{V}, T_J = +125^\circ\text{C}$
Reverse Recovery Time	t_{rr}	—	8.4	—	ns	$I_F = 10\text{mA}, I_{rrm} = 0.1I_r, T_A = +25^\circ\text{C}$
Total Capacitance	C_T	—	25	—	pF	$V_R = 5\text{V}, f = 1\text{MHz}$

Notes: 5. Test with FR-4 PC board 1-inch sq. copper pad, 2oz.

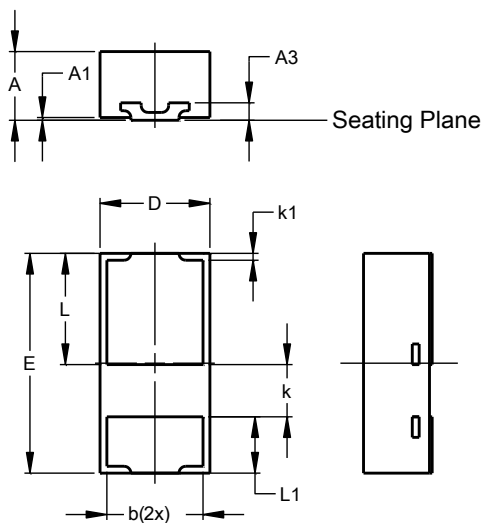
6. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

U-DFN1608-2

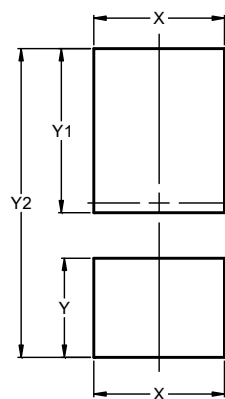


U-DFN1608-2			
Dim	Min	Max	Typ
A	0.47	0.53	0.50
A1	0.00	0.05	0.02
A3	-	-	0.127
b	0.65	0.75	0.70
D	0.75	0.85	0.80
E	1.55	1.65	1.60
k	0.38 BSC		
k1	0.05 BSC		
L	0.76	0.86	0.81
L1	0.36	0.46	0.41
All Dimensions in mm			

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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