SDM02M30DCP3

400mA DUAL COMMON CATHODE SCHOTTKY BARRIER DIODE DIE SIZE PACKAGE

Product Summary

V_{RRM} (V)	I_O (mA)	V_F Max (V) @ +25°C	I_R Max (µA) @ +25°C
30	400	0.75	2

Description

The SDM02M30DCP3 is a 30V Dual Common Cathode Schottky Barrier Diodes that is optimized for low capacitance and low leakage current. It's housed in a compact die size package that occupies only 0.6mm^2 board space with very low profile. The low thermal resistance enables designers to meet design challenges of increasing efficiency while reducing board space. It is ideally suited for use in portable applications.

Features and Benefits

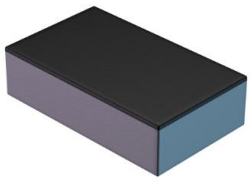
- 0.6mm^2 Footprint, Off Board Profile of 0.275mm
- Low Forward Voltage – Minimizes Power Dissipation Losses
- Low Leakage – Maximizes Battery Power
- Low Capacitance, Soft, Fast Switching Capability
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please contact us or your local Diodes representative.**
  https://www.diodes.com/quality/product-definitions/

Applications

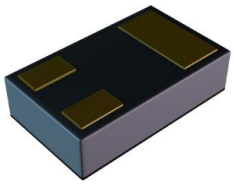
- Blocking Diode
- Reverse Protection Diode
- Boost Diode

Mechanical Data

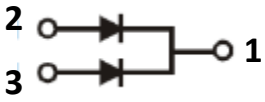
- Case: X3-DSN1006-3
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity Indicator: Cathode Bar
- Terminals: NiAu Bump. Solderable per MIL-STD-202, Method 208 e4
- Weight: 0.1mg (Approximate)



Top View



Bottom View

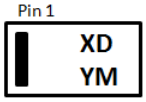


Ordering Information (Note 4)

Part Number	Case	Packaging
SDM02M30DCP3-7	X3-DSN1006-3	5,000/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



XD = Product Type Marking Code
YM = Date Code Marking
Y or $\overline{Y}$= Year (ex: G = 2019)
M = Month (ex: 9 = September)
Bar Denotes Cathode Pin

Date Code Key

Year	2016	…	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Code	D	…	G	H	I	J	K	L	M	N	O	P

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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_{RRM}	30	V
Average Rectified Output Current (Total)	I_O	400	mA
Repetitive Peak Forward Current, $t_p \le 1s$; $\delta \le 0.5$	I_{FRM}	2	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	7	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	200	°C/W
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop (Per Diode)	V_F	—	280	320	mV	I_F = 1mA, T_J = +25°C
		—	350	400		I_F = 10mA, T_J = +25°C
		—	410	500		I_F = 30mA, T_J = +25°C
		—	540	600		I_F = 100mA, T_J = +25°C
		—	680	750		I_F = 200mA, T_J = +25°C
Leakage Current (Note 6) (Per Diode)	I_R	—	0.1	2	µA	V_R = 30V, T_J = +25°C
Junction Capacitance (Per Diode)	C_J	—	7	10	pF	V_R = 1V, T_J = +25°C , f = 1MHz
Reverse Recovery Time	t_{RR}	—	2.99	5	ns	I_F = 10mA through I_R = 10mA to I_R = 1.0mA, R_L = 100Ω

Notes: 5. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
6. Short duration pulse test used to minimize self-heating effect.

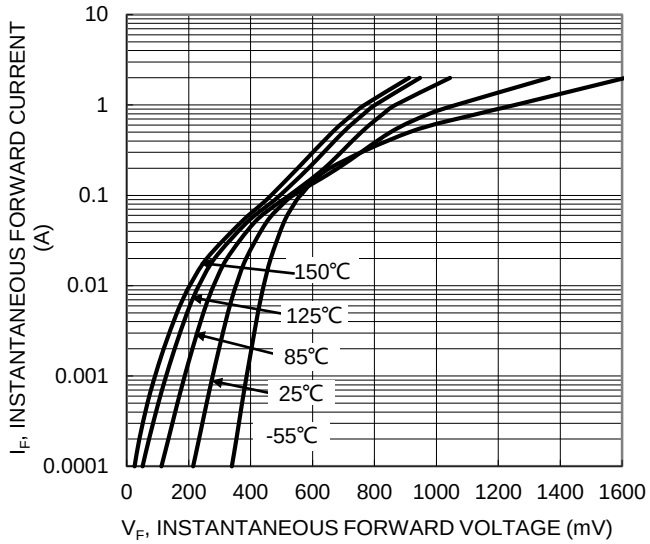


Figure 1. Typical Forward Characteristics

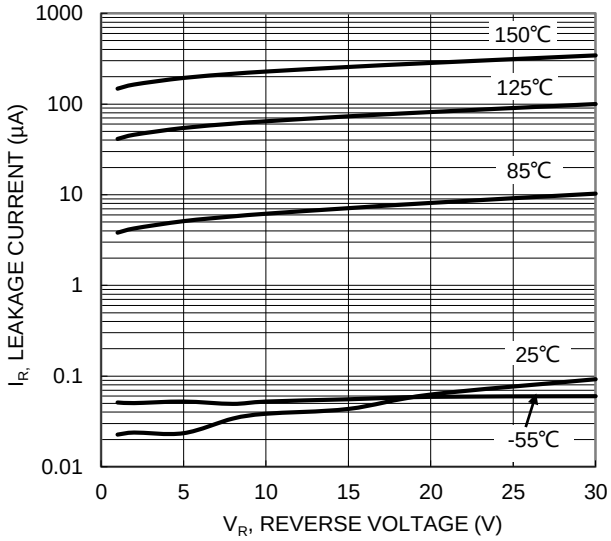


Figure 2. Typical Reverse Characteristics

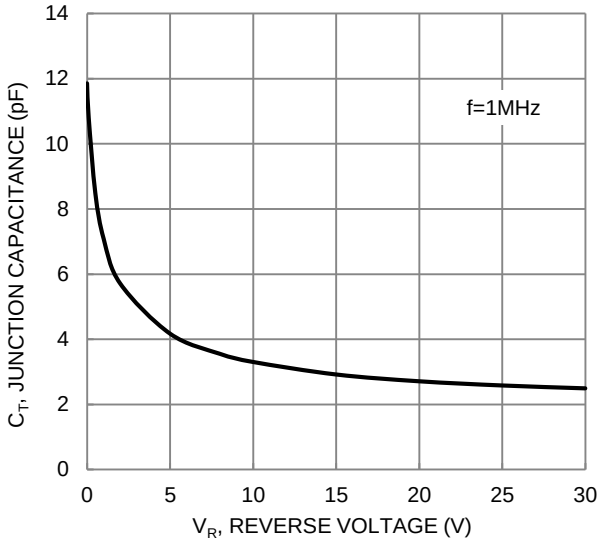
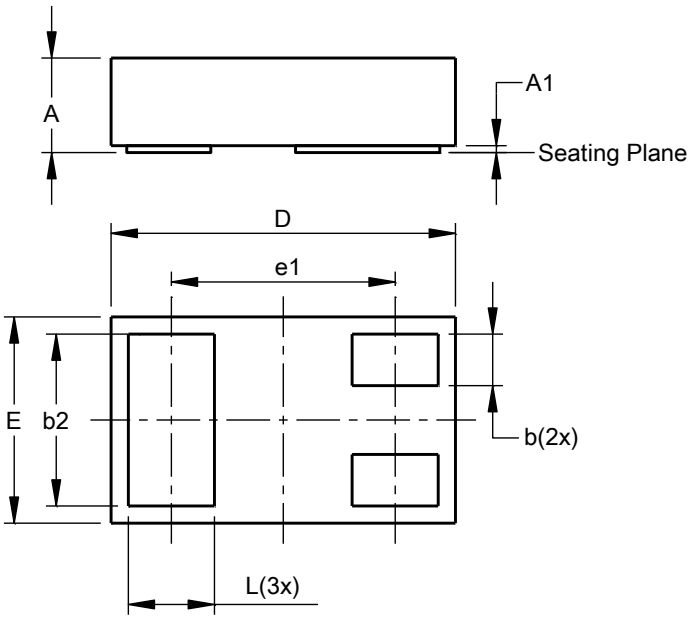


Figure 3. Typical Junction Capacitance

Package Outline Dimensions

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

X3-DSN1006-3

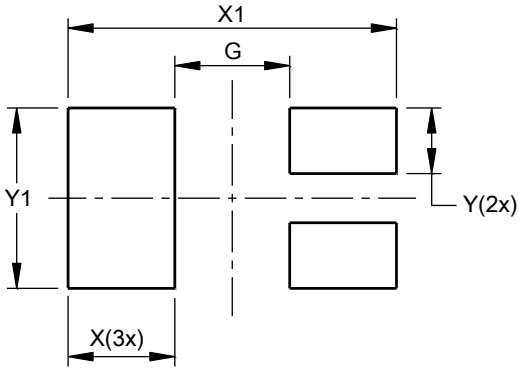


X3-DSN1006-3			
Dim	**Min**	**Max**	**Typ**
A	0.250	0.300	0.275
A1	0.00	0.02	0.01
b	0.130	0.170	0.150
b2	0.480	0.520	0.500
D	0.960	1.040	1.00
E	0.560	0.640	0.600
e	--	--	0.350
e1	--	--	0.650
L	0.230	0.270	0.250
All Dimensions in mm			

Suggested Pad Layout

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

X3-DSN1006-3



Dimensions	Value (in mm)
G	0.350
X	0.325
X1	1.00
Y	0.200
Y1	0.550

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