

## Product Summary

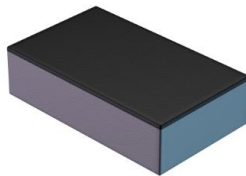
V <sub>RRM</sub> (V)	I <sub>o</sub> (mA)	V <sub>F</sub> Max (V) @ +25°C	I <sub>R</sub> Max (μA) @ +25°C
30	400	0.75	2

## Description

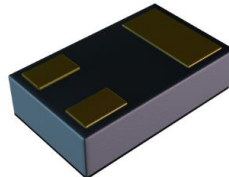
The SDM02M30DCP3 is a 30V Dual Common Cathode Schottky Barrier Diodes that is optimized for low capacitance and low leakage current. It's housed in a compact die size package that occupies only 0.6mm<sup>2</sup> board space with very low profile. The low thermal resistance enables designers to meet design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

## Applications

- Blocking Diode
- Reverse Protection Diode
- Boost Diode



Top View



Bottom View



## Features and Benefits

- 0.6mm<sup>2</sup> 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](mailto:contact@diodes.com) or your local Diodes representative.**

<https://www.diodes.com/quality/product-definitions/>

## Mechanical Data

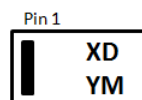
- Case: X3-DSN1006-3
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity Indicator: Cathode Bar
- Terminals: NiAu Bump. Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.1mg (Approximate)

## 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 Ȳ = Year (ex: H = 2020)  
 M = Month (ex: 9 = September)  
 Bar Denotes Cathode Pin

### Date Code Key

Year	2016	...	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Code	D	...	H	I	J	K	L	M	N	O	P	R

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<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>	30	V
Average Rectified Output Current (Total)	I <sub>O</sub>	400	mA
Repetitive Peak Forward Current, t <sub>p</sub> ≤ 1s; δ ≤ 0.5	I <sub>FRM</sub>	2	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	7	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	200	°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	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 Drop (Per Diode)	V <sub>F</sub>	—	280	320	mV	I <sub>F</sub> = 1mA, T <sub>J</sub> = +25°C
		—	350	400		I <sub>F</sub> = 10mA, T <sub>J</sub> = +25°C
		—	410	500		I <sub>F</sub> = 30mA, T <sub>J</sub> = +25°C
		—	540	600		I <sub>F</sub> = 100mA, T <sub>J</sub> = +25°C
		—	680	750		I <sub>F</sub> = 200mA, T <sub>J</sub> = +25°C
Leakage Current (Note 6) (Per Diode)	I <sub>R</sub>	—	0.1	2	μA	V <sub>R</sub> = 30V, T <sub>J</sub> = +25°C
Junction Capacitance (Per Diode)	C <sub>J</sub>	—	7	—	pF	V <sub>R</sub> = 1V, T <sub>J</sub> = +25°C, f = 1MHz
Reverse Recovery Time	t <sub>RR</sub>	—	2.99	—	ns	I <sub>F</sub> = 10mA through I <sub>R</sub> = 10mA to I <sub>R</sub> = 1.0mA, R <sub>L</sub> = 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.

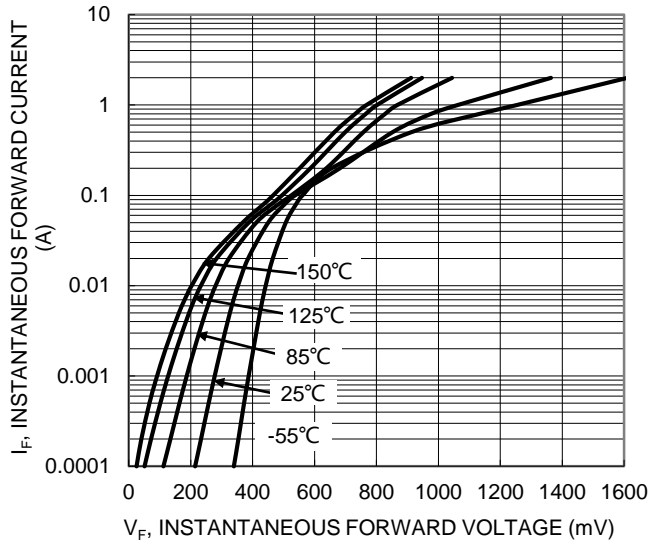


Figure 1. Typical Forward Characteristics

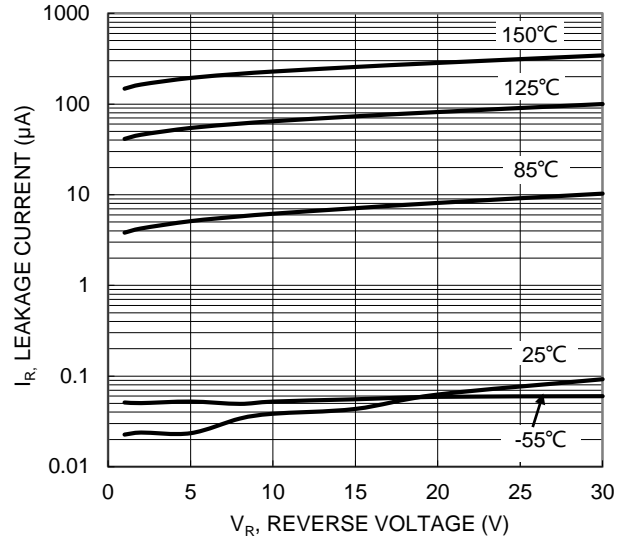


Figure 2. Typical Reverse Characteristics

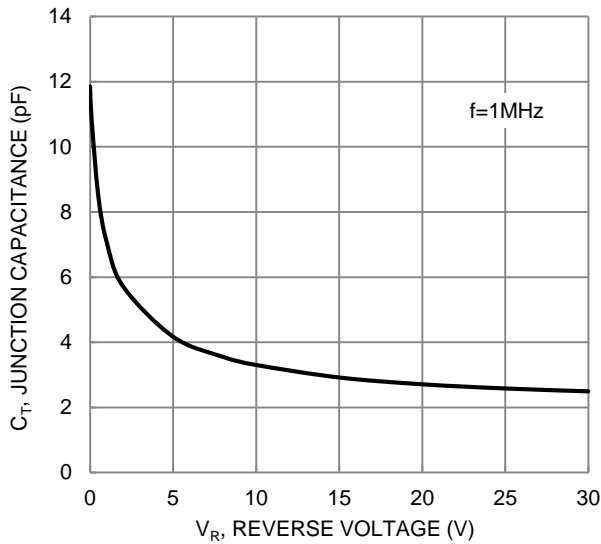
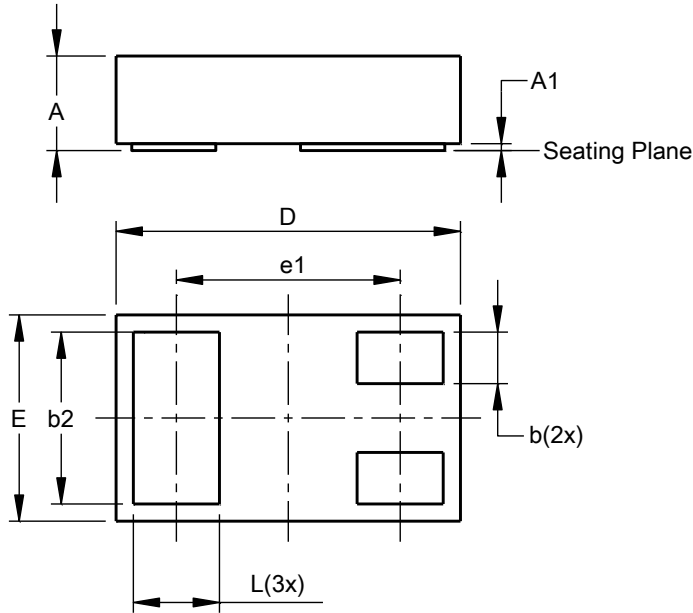


Figure 3. Typical Junction Capacitance

## Package Outline Dimensions

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

**X3-DSN1006-3**

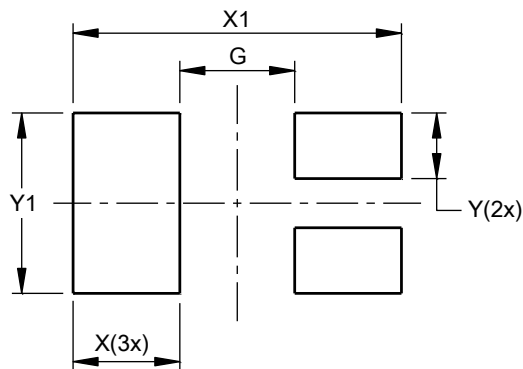


X3-DSN1006-3			
Dim	Min	Max	Typ
A	0.250	0.300	0.275
A1	0.00	0.02	0.01
b	0.130	0.170	0.150
b2	0.480	0.520	0.500
D	0.960	1.040	1.00
E	0.560	0.640	0.600
e	--	--	0.350
e1	--	--	0.650
L	0.230	0.270	0.250
All Dimensions in mm			

## 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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