1A DUAL COMMON CATHODE SCHOTTKY BARRIER DIODE DIE SIZE PACKAGE

NEW PRODUCT

Product Summary

V_{RRM} (V)	I_O (A)	V_F Max (V) @ +25°C	I_R Max (µA) @ +25°C
20	1	0.50	100

Description and Applications

The SDM1L20DCP3 is a 20V Dual Common Cathode Schottky Barrier Diodes that is optimized for very low forward voltage drop and low leakage current. It's housed in a compact die size package that occupies only 0.6mm^2 board space with 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 such as:

- Blocking Diode
- Reverse Protection Diode
- Boost Diode

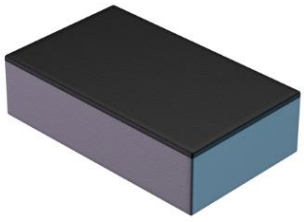
Features and Benefits

- 0.6mm^2 Footprint, Off Board Profile of 0.275mm
- Low Forward Voltage – Minimizes Power Dissipation Losses
- Low Leakage – Maximizes Battery Power
- Soft, Fast Switching Capability
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

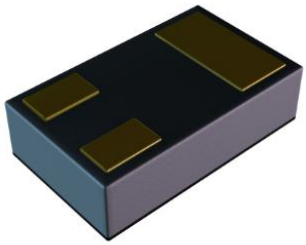
Mechanical Data

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

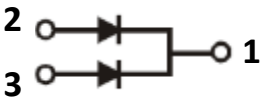
X3-DSN1006-3



Top View



Bottom View

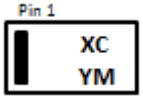


Ordering Information (Note 4)

Part Number	Case	Packaging
SDM1L20DCP3-7	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



XC = 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	2017	2018	2019	2020	2021	2022
Code	D	E	F	G	H	I	J

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

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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}	20	V
Average Rectified Output Current (Total)	I_O	1	A
Repetitive Peak Forward Current, $t_p \le 1ms$; $\delta \le 0.25$ (Single Diode)	I_{FRM}	3	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Single Diode)	I_{FSM}	10	A
ESD Rating Human Body Model Charged Device Model	ESD	8 1	kV

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	245	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	105	°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 (Single Diode)	V_F	— — — —	210 290 330 420	260 350 400 500	mV	I_F = 10mA, T_J = +25°C I_F = 100mA, T_J = +25°C I_F = 200mA, T_J = +25°C I_F = 500mA, T_J = +25°C
Leakage Current (Note 7) (Single Diode)	I_R	— —	15 32	50 100	µA	V_R = 10V, T_J = +25°C V_R = 20V, T_J = +25°C
Junction Capacitance (Single Diode)	C_J	—	18	—	pF	V_R = 5V, T_J = +25°C, f = 1MHz
Reverse Recovery Time (Single Diode)	t_{RR}	—	8.6	—	ns	I_F = 10mA, I_{RR} = 0.1 × I_R

Notes:
5. Device mounted on FR-4 substrate PC board, 2oz Cu with minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
6. Device mounted on FR-4 substrate PC board, 1 inch square 2oz Cu pad.
7. Short duration pulse test used to minimize self-heating effect.

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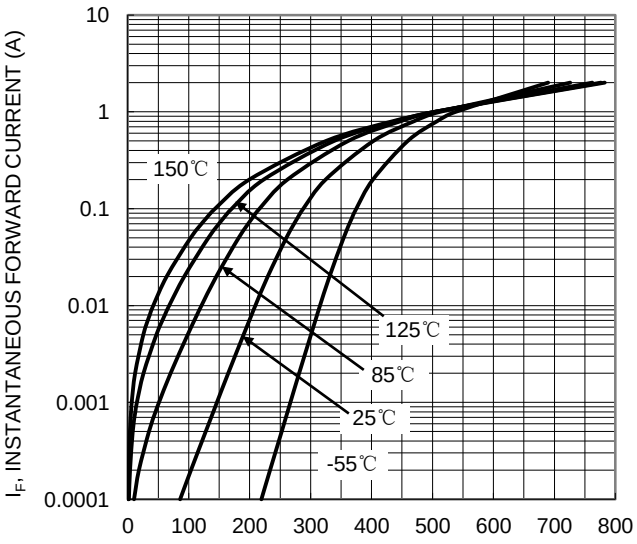

Figure 1. Typical Forward Characteristics

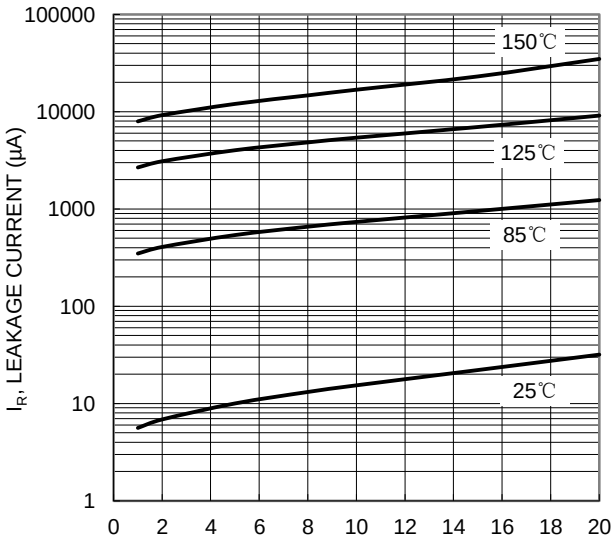

Figure 2. Typical Reverse Characteristics

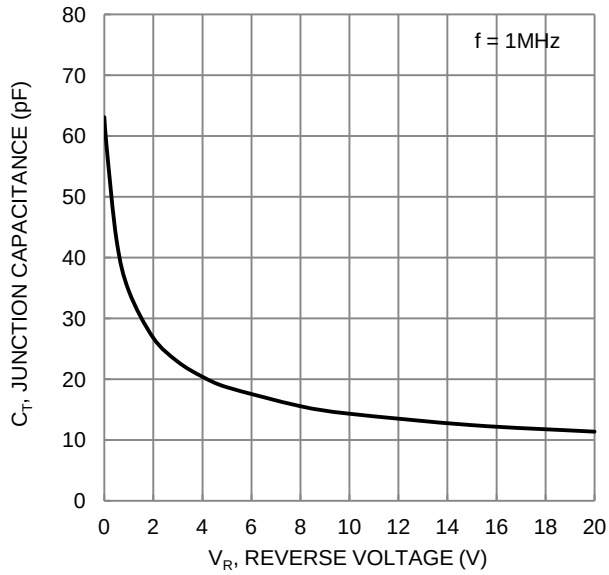

Figure 3. Typical Junction Capacitance

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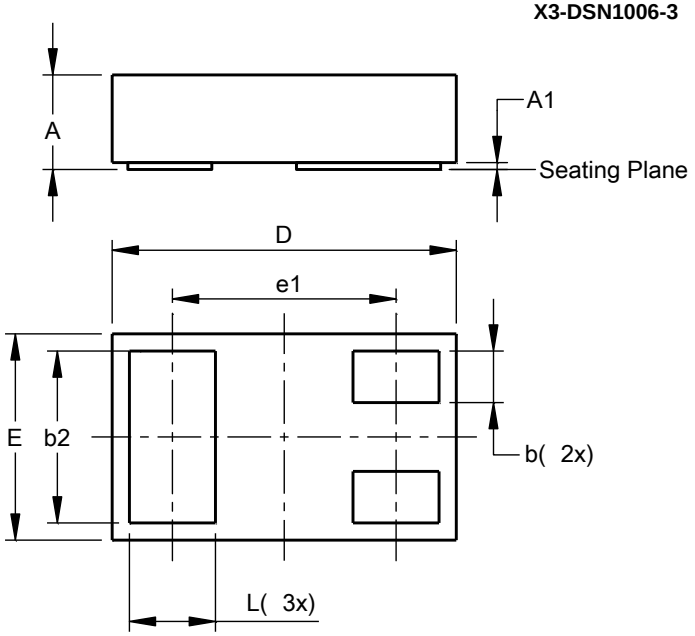
Package Outline Dimensions

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

X3-DSN1006-3

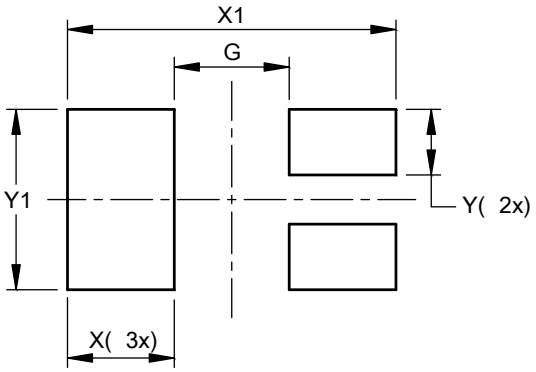


X3-DSN1006-3			
Dim	**Min**	**Max**	**Typ**
A	0.250	0.300	0.275
A1	0.00	0.02	0.01
b	0.130	0.170	0.150
b2	0.480	0.520	0.500
D	0.960	1.040	1.00
E	0.560	0.640	0.600
e	--	--	0.350
e1	--	--	0.650
L	0.230	0.270	0.250
All Dimensions in mm			

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

NEW PRODUCT

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