



**THE DATASHEET OF
SDM2U20CSP-7**



Product Summary

V_{RRM} (V)	I_o (A)	V_F Max (V)	I_R Max (μ A)
20	2.0	0.47	150

Description

The SDM2U20CSP is a 20-volt 2A Schottky Barrier Rectifier that is optimized for low forward voltage drop and low leakage current, housed in a compact chip scale package (CSP) that occupies only 1.28mm² board-space with low profile. The low thermal resistance enables designers to meet design challenges of increasing efficiency while at the same time reducing board space.

Applications

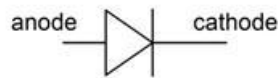
- Blocking Diode
- Boost Diode
- Switching Diode
- Reverse Protection Diode

Features and Benefits

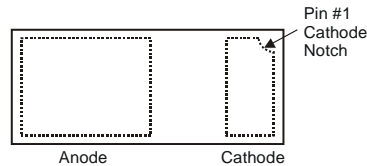
- Low Forward Voltage (V_F) Minimizes Conduction Losses and Improving Efficiency
- Reduced High Temperature Reverse Leakage
- Increased Reliability Against Thermal Runaway Failure in High Temperature Operation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: X3-WLB1608-2
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: NiAu Bump. Solderable per MIL-STD-202, Method 208 ^(e4)
- Polarity: Cathode Dot
- Weight: 0.001 grams (Approximate)



Device Schematic

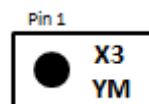


Ordering Information (Note 4)

Part Number	Case	Packaging
SDM2U20CSP-7B	X3-WLB1608-2	10,000/Tape & Reel
SDM2U20CSP-7	X3-WLB1608-2	5,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html 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 <http://www.diodes.com/products/packages.html>. SDM2U20CSP-7B uses carrier tapes with 2mm pocket-to-pocket pitch; SDM2U20CSP-7 uses carrier tapes with 4mm pocket-to-pocket pitch.

Marking Information



X3= Product Type Marking Code
 YM=Date Code Marking
 Y= Year (ex: B= 2014)
 M=Month (ex: 9= September)
 Dot denotes Cathode Pin

Date Code Key

Year	2014	2015	2016	2017	2018	2019	2020
Code	B	C	D	E	F	G	H

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 capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	20	V
Average Rectified Output Current	I _O	2.0	A
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I _{FRM}	5.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	20	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	150	°C/W
Total Power Dissipation (Note 5)	P _{TOT}	830	mW
Operating and Storage Temperature Range	T _J , 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	V _F	—	—	0.42	V	I _F = 1.0A
		—	—	0.47		I _F = 2.0A
Reverse Current (Note 7)	I _R	—	40	150	μA	V _R = 20V
Junction Capacitance	C _J	—	115	—	pF	V _R = 4V, f = 1.0MHz

Notes: 5. Device mounted on FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
6. Device mounted on FR-4 PCB, 2oz. Copper, 1 square inch pad.
7. Short duration pulse test used to minimize self-heating effect.

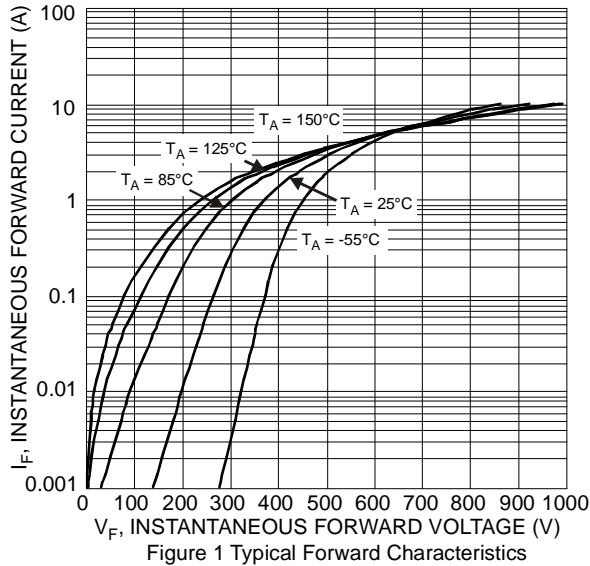


Figure 1 Typical Forward Characteristics

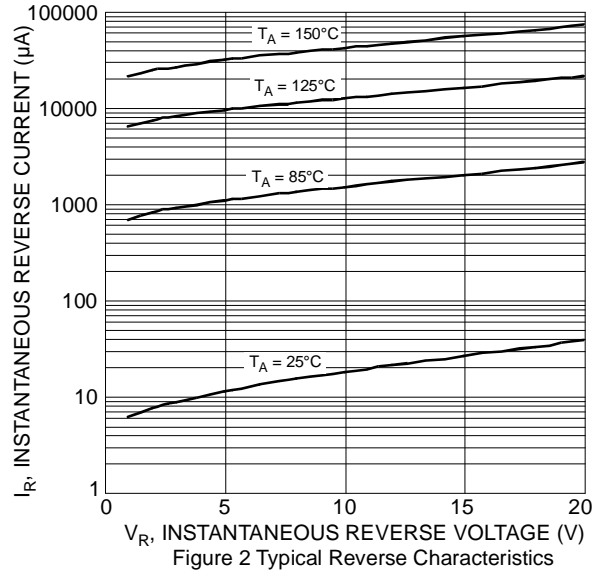


Figure 2 Typical Reverse Characteristics

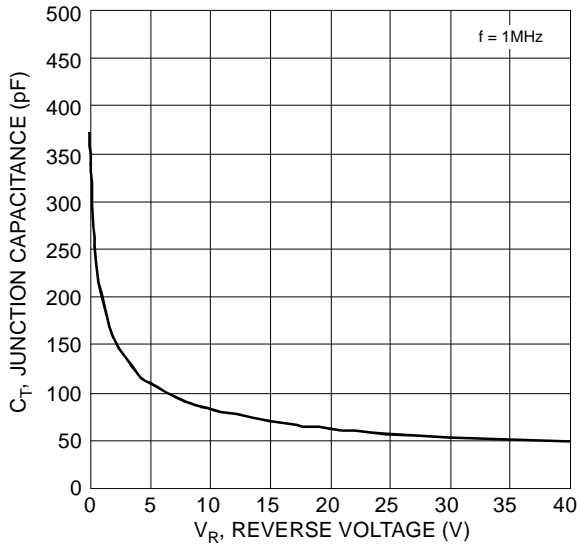


Figure 3 Typical Junction Capacitance

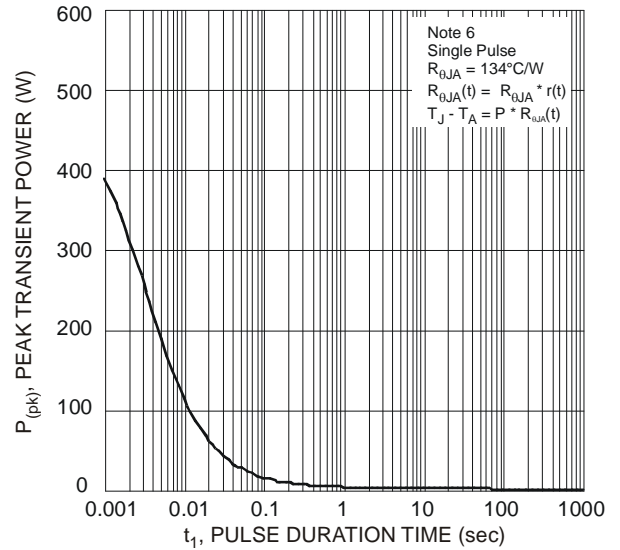
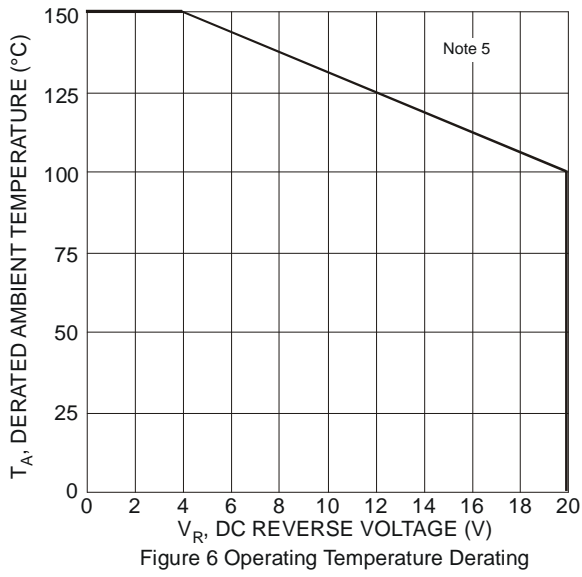
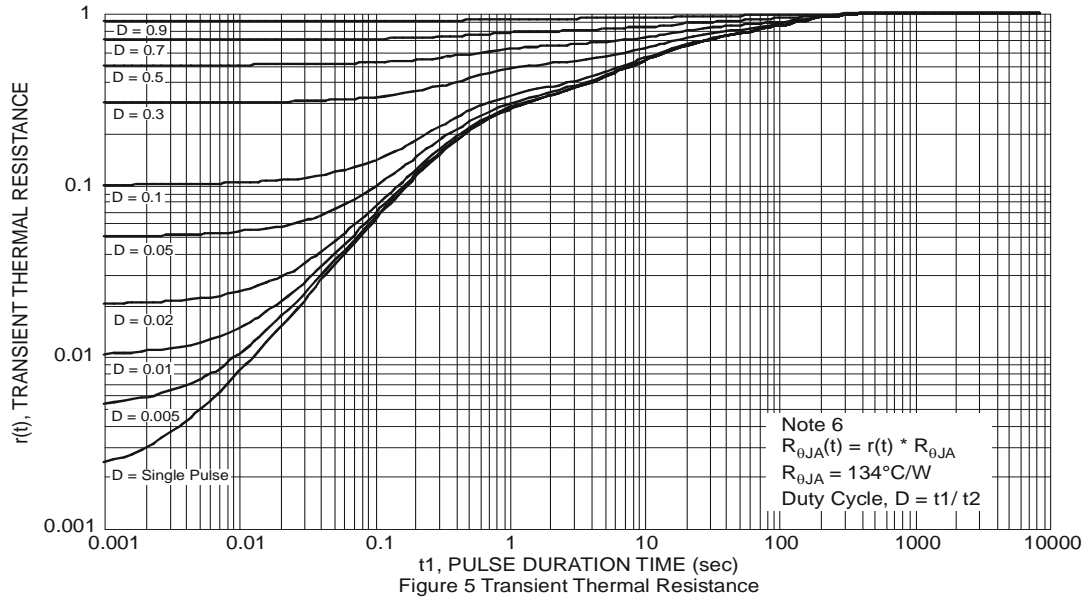


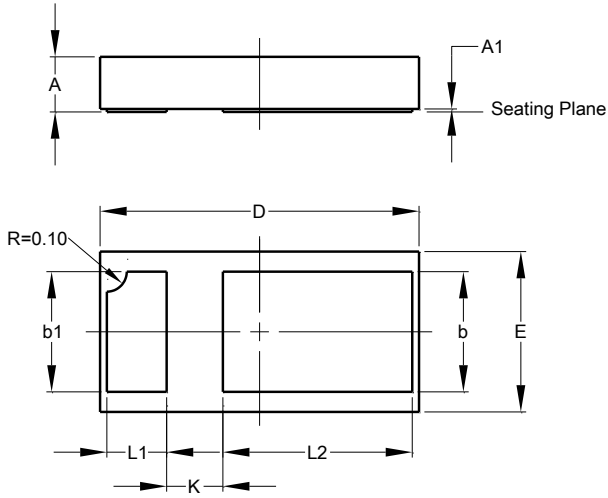
Figure 4 Single Pulse Maximum Power Dissipation



Package Outline Dimensions

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.

X3-WLB1608-2

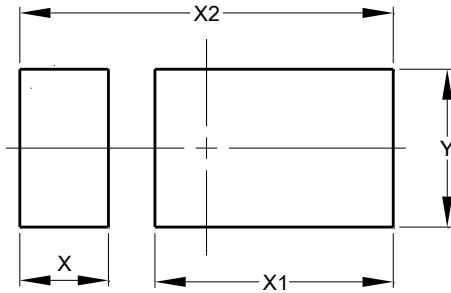


X3-WLB1608-2			
Dim	Min	Max	Typ
A	0.250	0.300	0.275
A1	-	0.015	-
b	-	-	0.600
b1	-	-	0.600
D	1.57	1.63	1.60
E	0.77	0.83	0.80
K	-	-	0.282
L1	0.25	0.35	0.30
L2	0.90	1.00	0.95
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.

X3-WLB1608-2



Dimensions	Value (in mm)
X	0.385
X1	1.035
X2	1.622
Y	0.690

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