



SDM2U20CSP

2.0A SCHOTTKY BARRIER RECTIFER CHIP SCALE PACKAGE

Product Summary

V _{RRM} (V)	I _O (A)	V _F Max (V)	I _R Max (μA)
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

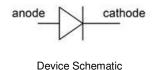
- Blocking Diode
- Boost Diode
- Switching Diode
- Reverse Protection Diode

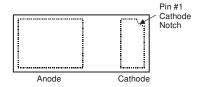
Features and Benefits

- 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 @4)
- Polarity: Cathode Dot
- Weight: 0.001 grams (Approximate)





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.
- See http://www.diodes.com/quality/lead_free.htmlfor 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	201	4	2015		2016	20	17	2018		2019	2	2020
Code	В		С		D	E		F		G		Н
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	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	lo	2.0	Α
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I _{FRM}	5.0	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	20	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{ heta JA}$	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

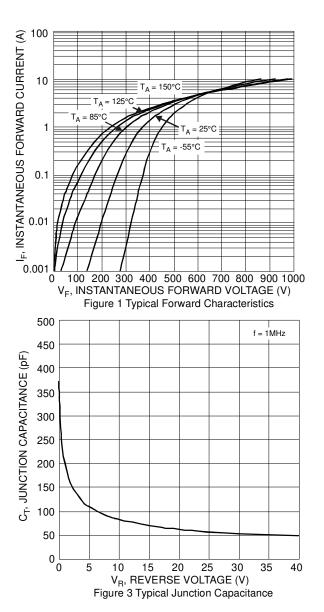
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

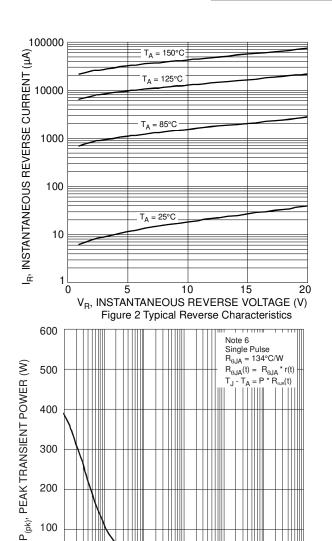
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V _F	-	-	0.42	V	I _F = 1.0A
		_	_	0.47		I _F = 2.0A
Reverse Current (Note 7)	I _R	_	40	150	μΑ	V _R = 20V
Junction Capacitance	СЈ	ı	115	1	pF	V _R = 4V, f = 1.0MHz

Notes:

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







t₁, PULSE DURATION TIME (sec)
Figure 4 Single Pulse Maximum Power Dissipation

10

100

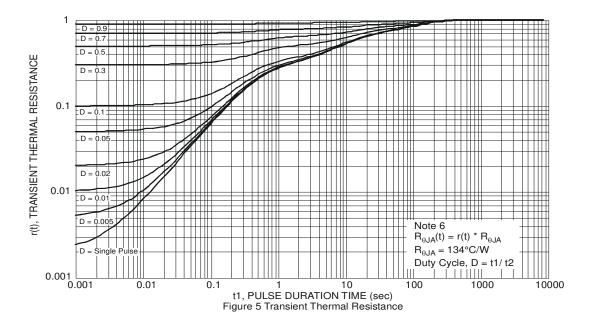
1000

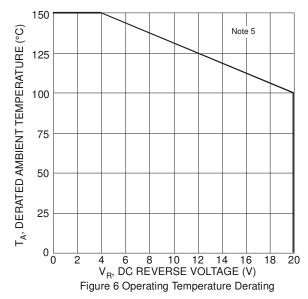
0.001

0.01

0.1





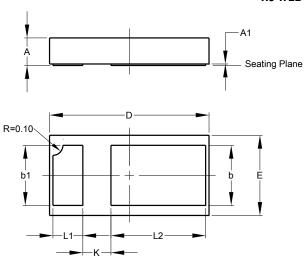




Package Outline Dimensions

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

X3-WLB1608-2

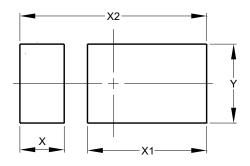


	VO 14/1 F	24600.0					
X3-WLB1608-2							
Dim	Min	Max	Тур				
Α	0.250	0.300	0.275				
A1	_	0.015	_				
b	_	_	0.600				
b1	_	_	0.600				
D	1.57	1.63	1.60				
Е	0.77	0.83	0.80				
K	_	1	0.282				
L1	0.25	0.35	0.30				
L2	0.90	1.00	0.95				
All Dimensions in mm							

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)		
Difficusions			
X	0.385		
X1	1.035		
X2	1.622		
γ	0.690		



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