



SDM2A20CSP

2.0A SCHOTTKY BARRIER RECTIFIER CHIP SCALE PACKAGE

Product Summary

V _{RRM} (V)	I _O (A)	V _{F max} (V)	I _{R max} (μA)
20	2.0	0.53	80

Features and Benefits

- Low forward voltage (V_F) minimizes conduction losses and improves 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)

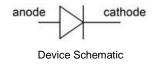
Description and Applications

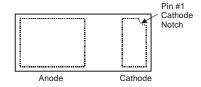
The SDM2A20CSP is a 20-volt 2A Schottky barrier rectifier that is optimized for low forward voltage drop and low leakage current. Housed in a compact chip scale package (CSP), the SDM2A20CSP occupies only 0.84 mm² board-space with low profile. The low thermal resistance enables designers to meet design challenges of increasing efficiency whilst at the same time reducing board space. It is ideally suited for use in portable applications as a:

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

Mechanical Data

- Case: X3-WLB1406-2
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-202, Method 208 (e4)
- Polarity: Cathode Dot
- Weight: 0.001 grams (Approximate)





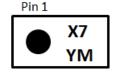
Ordering Information (Note 4)

Part Number	Case	Packaging
SDM2A20CSP-7	X3-WLB1406-2	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.

Marking Information



X7=Product Type Marking Code YM=Date Code Marking Y=Year (ex: C=2015) 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		Ε	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	l ₀	2.0	А
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 _{θJA}	140	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	73	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

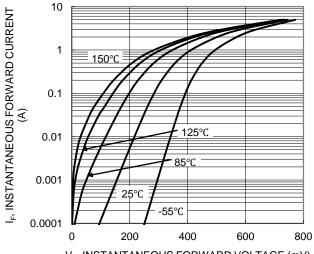
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop	V-	I	l	0.44	V	I _F = 1.0A
Forward Voltage Drop	VF	_	_	0.53		I _F = 2.0A
Doverse Current (Note 7)	I _R	_	_	25		V _R = 10V
Reverse Current (Note 7)			1	80		$V_R = 20V$
Junction Capacitance	C_{T}	I	70	1	pF	$V_R = 5V$, $f = 1.0MHz$

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. 1 square inch Copper.
- 7. Short duration pulse test used to minimize self-heating effect.





 $V_{\rm F}$, INSTANTANEOUS FORWARD VOLTAGE (mV) Figure 1. Typical Forward Characteristics

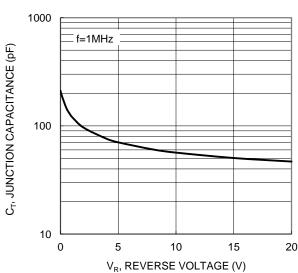
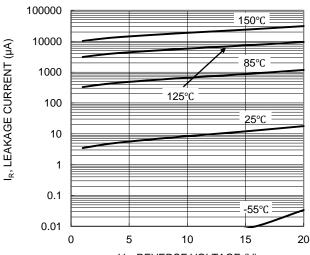
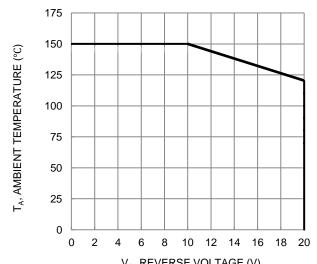


Figure 3. Typical Junction Capacitance



 V_R , REVERSE VOLTAGE (V) Figure 2. Typical Reverse Characteristics

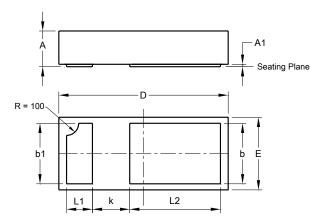


 V_R , REVERSE VOLTAGE (V) Figure 4. Operating Temperature Derating



Package Outline Dimensions

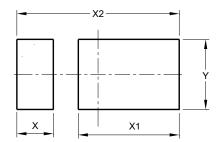
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



	X3-WLB1406-2							
Dim	Min	Max	Тур					
Α	0.250	0.300	0.275					
A1	0.000	0.015	-					
b	0.45	0.55	-					
b1	0.45	0.55	-					
D	1.37	1.43	1.40					
Е	0.57	0.63	0.60					
k	-	-	0.30					
L1	0.20	0.26	-					
L2	0.70	0.80	-					
All I	All Dimensions in mm							

Suggested Pad Layout

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



Dimensions	Value		
Dillielisions	(in mm)		
Х	0.304		
X1	0.840		
X2	1.352		
Υ	0.580		



IMPORTANT NOTICE

DIODES INCORPORATED MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARDS TO THIS DOCUMENT, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION).

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to this document and any product described herein. Diodes Incorporated does not assume any liability arising out of the application or use of this document or any product described herein; neither does Diodes Incorporated convey any license under its patent or trademark rights, nor the rights of others. Any Customer or user of this document or products described herein in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on Diodes Incorporated website, harmless against all damages.

Diodes Incorporated does not warrant or accept any liability whatsoever in respect of any products purchased through unauthorized sales channel. Should Customers purchase or use Diodes Incorporated products for any unintended or unauthorized application, Customers shall indemnify and hold Diodes Incorporated and its representatives harmless against all claims, damages, expenses, and attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized application.

Products described herein may be covered by one or more United States, international or foreign patents pending. Product names and markings noted herein may also be covered by one or more United States, international or foreign trademarks.

This document is written in English but may be translated into multiple languages for reference. Only the English version of this document is the final and determinative format released by Diodes Incorporated.

LIFE SUPPORT

Diodes Incorporated products are specifically not authorized for use as critical components in life support devices or systems without the express written approval of the Chief Executive Officer of Diodes Incorporated. As used herein:

- A. Life support devices or systems are devices or systems which:
 - 1. are intended to implant into the body, or
 - 2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.
- B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

Customers represent that they have all necessary expertise in the safety and regulatory ramifications of their life support devices or systems, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of Diodes Incorporated products in such safety-critical, life support devices or systems, notwithstanding any devices- or systems-related information or support that may be provided by Diodes Incorporated. Further, Customers must fully indemnify Diodes Incorporated and its representatives against any damages arising out of the use of Diodes Incorporated products in such safety-critical, life support devices or systems.

Copyright © 2015, Diodes Incorporated

www.diodes.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Diodes Incorporated: SDM2A20CSP-7