



SDM05U20CSP

0.5A SCHOTTKY BARRIER RECTIFER CHIP SCALE PACKAGE

Product Summary

V _{RRM} (V)	I _O (A)	V _F Max (V)	I _R Max (μA)
20	0.5	0.43	55

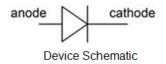
Description

The SDM05U20CSP is a 20-Volt 0.5A 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 0.6mm² board space. The low thermal resistance enables designers to meet design challenges of increasing efficiency while at the same time reducing board space.

Applications

It is ideally suited for use in portable applications such as:

- Blocking Diodes
- Boost Diodes
- Switching Diodes
- Reverse Protection Diodes

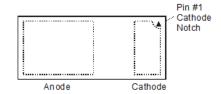


Features and Benefits

- Off Board Profile of 0.275mm More than 30% Thinner than DFN1006
- 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)

Mechanical Data

- Case: X3-WLB1006-2
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Dot
- Terminals: Finish NiAu Bump, Solderable per MIL-STD-202, Method 208
- Weight: 0.001 grams (Approximate)



Ordering Information (Note 4)

Part Number	Case	Packaging
SDM05U20CSP-7	X3-WLB1006-2	5,000/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.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

Pin 1

X9
YM

X9 = Product Type Marking Code YM = Date Code Marking Y or \bar{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			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	0.5	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	14	А

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{0JA}	155	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	$R_{ heta JA}$	95	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

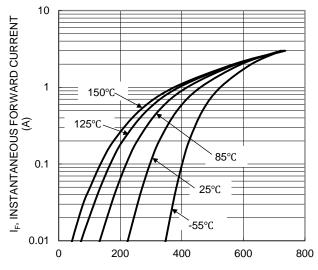
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Forward Voltage Drop		_	_	0.34	V	I _F = 0.1A
	V _F	_	_	0.43		I _F = 0.5A
		_	0.29	_		I _F = 0.5A, T _J = +125°C
Leakage Current (Note 7)	I _R	_	_	15	l uA	V _R = 10V
		_	_	55		V _R = 20V
Junction Capacitance	Ст	_	46	_	pF	V _R = 4V, f = 1.0MHz

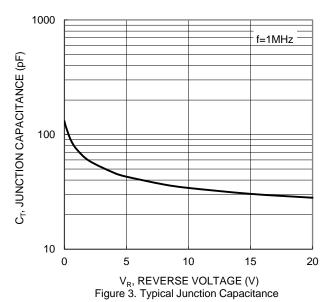
Notes:

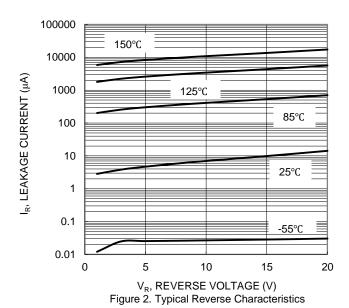
- 5. Device mounted on FR-4 PCB, 2oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
- 6. Device mounted on FR-4 PCB, 2oz. 1 square inch Copper.
- 7. Short duration pulse test used to minimize self-heating effect.









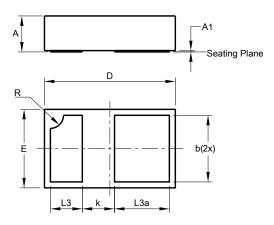




Package Outline Dimensions

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

X3-WLB1006-2

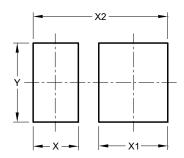


X3-WLB1006-2					
Dim	Min	Max	Тур		
Α	0.25	0.30	0.275		
A1	0.00	0.01	-		
b	0.450	0.550	0.500		
D	0.95	1.05	1.000		
Е	0.55	0.65	0.600		
k	-	-	0.288		
L3	0.194	0.294	0.244		
L3a	0.350	0.450	0.400		
R	-	-	0.100		
All Dimensions in mm					

Suggested Pad Layout

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

X3-WLB1006-2



Dimensions	Value (in mm)		
Х	0.332		
X1	0.507		
X2	0.989		
Y	0.579		



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