



PD3S130HQ

1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

PowerDI®323

Product Summary

V _R (V)	I _F (A)	V _{F MAX} (V) @ +25°C	I _{R MAX} (mA) @ +25°C
30	0.7	0.45	0.1

Description and Applications

This Schottky Barrier Rectifier has been designed to meet the stringent requirements of Automotive Applications. It is ideally suited

- Polarity Protection Diode
- Re-circulating Diode
- Switching Diode

Features and Benefits

- Ultra-Small Surface Mount Package
- Guard Ring Die Construction for Transient Protection
- High Surge Capability
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

Mechanical Data

- Case: PowerDI323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: Cathode Band
- Terminals: Finish Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 @3
- Weight: 0.006 grams (approximate)



Top View



Bottom View

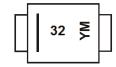
Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
PD3S130HQ-7	Automotive	PowerDI323	3000/Tape & Reel

Notes:

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to http://www.diodes.com/quality/product_compliance_definitions/.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



32 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: B = 2014)M = Month (ex: 9 = September)

Date Code Key

 Date Code Ney							
Year	2014	2015	2016	2017	2018	2019	2020
Code	В	С	D	Е	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 ($@T_A = +25^{\circ}C$, 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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	30	V
RMS Reverse Voltage	V _{R(RMS)}	21	V
Average Forward Current (See also figure 4)	I _{F(AV)}	1.0	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	22	А

Thermal Characteristics

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{ heta}$ JS	_	6.0	
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{ heta JA}$	177	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 7)	$R_{ heta JA}$	128	_	
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
Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	30	_	_	V	I _R = 100μA
Forward Voltage	V _F		0.35 0.42 0.47	0.45 —	٧	I _F = 0.1A I _F = 0.7A I _F = 1.0A
Leakage Current (Note 8)	I _R		0.7 10	 100		V _R = 5V, T _A = +25°C V _R = 30V, T _A = +25°C
Total Capacitance	C _T	_	40	_	pF	V _R = 10V, f = 1.0MHz

Notes:

- 6. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com 7. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com 8. Short duration pulse test used to minimize self-heating effect.

T_A = 125°C

=85°C

 $T_A = 25^{\circ}C$

0.6

20

0.8

f = 1MHz

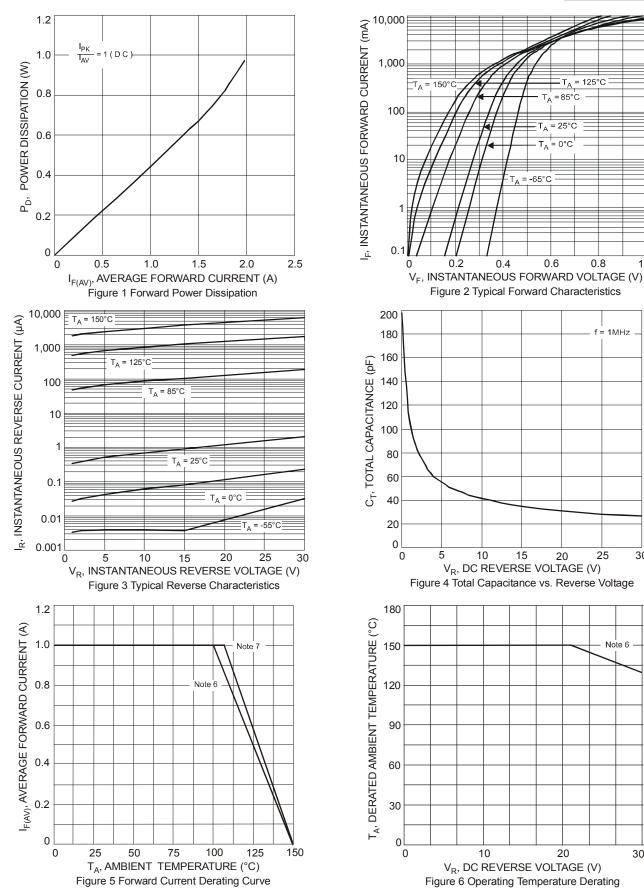
1.0

30

Note 6

= 0°C



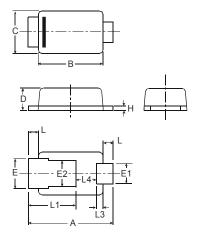


30



Package Outline Dimensions

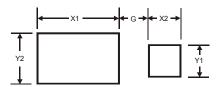
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



	POWERDI®323							
Dim	Min	Max	Тур					
Α	2.40	2.60	2.50					
В	1.85	1.95	1.90					
С	1.20	1.30	1.25					
D	0.60	0.70	0.65					
Е	0.78	0.98	0.88					
E1	0.50	0.70	0.60					
E2	0.60	1.00	0.80					
Н	0.08	0.18	0.13					
٦	0.20	0.40	0.30					
L1	_	_	1.40					
L3	_	_	0.20					
L4	0.40	0.80	0.60					
All C								

Suggested Pad Layout

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



Dimensions	Value (in mm)
G	0.5
X1	2.0
X2	0.8
Y1	0.8
Y2	1 1



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