

**PDS340** 

**3A SCHOTTKY BARRIER RECTIFIER** PowerDl<sup>®</sup>5

#### **Features**

- Guard Ring Die Construction for Transient Protection ٠
- Low Power Loss, High Efficiency .
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- High Forward Surge Current Capability
- Lead Free Finish, RoHS Compliant (Note 1)
- "Green" Molding Compound (No Br, Sb)
- Qualified to AEC-Q101 Standards for High Reliability

#### **Mechanical Data**

- Case: PowerDI<sup>®</sup>5 ٠
- Case Material: Molded Plastic, "Green" Molding Compound. UL • Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Diagram
- Weight: 0.093 grams (approximate)



Top View



Bottom View

LEFT PIN O BOTTOMSIDE -0 HEAT SINK RIGHT PIN 0

Note: Pins Left & Right must be electrically connected at the printed circuit board.

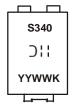
#### Ordering Information (Note 2)

Part Number	Case	Packaging
PDS340-13	PowerDI <sup>®</sup> 5	5000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.

2. For packaging details, go to our website at http://www.diodes.com.

## Marking Information



S340 = Product type marking code )|| = Manufacturers' code marking YYWW = Date code marking YY = Last digit of year (ex: 04 for 2004) WW = Week code (01 - 53)K = Factory Designator

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# **Maximum Ratings** @T<sub>A</sub> = 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 Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	40	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Rectified Output Current (See also Figure 5)	Io	3	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I <sub>FSM</sub>	90	А

### **Thermal Characteristics**

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point	R <sub>0</sub> JS	_	6.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 3) $T_{A=}25^{\circ}C$	$R_{ ext{ heta}JA}$	95	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 4) $T_{A} = 25^{\circ}C$	$R_{ heta JA}$	60		°C/W
Thermal Resistance Junction to Ambient Air (Note 5) $T_{A} = 25^{\circ}C$	$R_{ heta JA}$	50	—	°C/W
Operating and Storage Temperature Range	TJ, TSTG	-65 to	o +150	°C

### **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

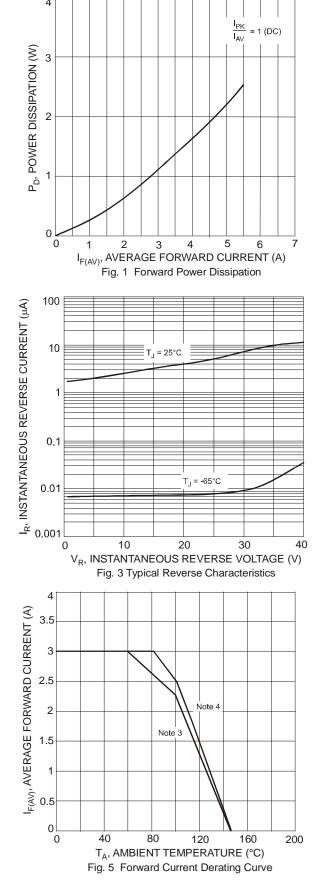
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	40		_	V	I <sub>R</sub> = 0.5mA
Forward Voltage		_	0.45 0.38	0.49 0.42	V	I <sub>F</sub> = 3A, T <sub>J</sub> = 25°C I <sub>F</sub> = 3A, T <sub>J</sub> = 125°C
	V <sub>F</sub>	_	0.53	0.42		$I_F = 6A, T_J = 25^{\circ}C$
		_	0.50	0.57		I <sub>F</sub> = 6A, T <sub>J</sub> = 125°C
Reverse Current (Note 6)			15	500	μA	$T_J = 25^{\circ}C, V_R = 40V$
	I <sub>R</sub>	—	3	20	mA	$T_{J} = 100^{\circ}C, V_{R} = 40V$
		—	10	25	mA	$T_{J} = 125^{\circ}C, V_{R} = 40V$

Notes:

3. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com.
4. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com.
5. Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 6.5mm x 5.0mm. Anode pad dimensions 1.8mm x 1.1mm.
6. Short duration pulse test used to minimize self-heating effect.

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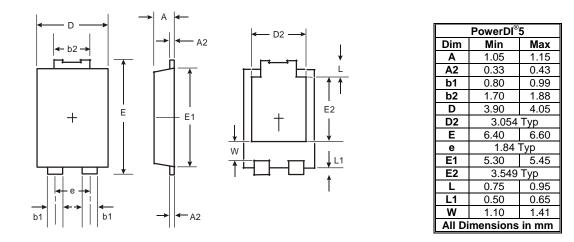
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Document number: DS30478 Rev. 8 - 2 Downloaded from Elcodis.com electronic components distributor 100 T<sub>J</sub> = 150°C **T**<sub>J</sub> = 125°C T<sub>.1</sub> = 100°C T<sub>J</sub> = 85°C = 25°C T<sub>J</sub> = -65°C 0 100 200 300 400 500 600 700 800 900 1,000 V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (mV) Fig. 2 Typical Forward Characteristics 800 700 MHz C<sub>T</sub>, TOTAL CAPACITANCE (pF) 600 500 400 300 200 100 0 10 15 20 25 30 V<sub>R</sub>, DC REVERSE VOLTAGE (V) 0 5 35 40 Fig. 4 Total Capacitance vs. Reverse Voltage 160  $\mathsf{T}_\mathsf{A},$  DERATED AMBIENT TEMPERATURE (°C) 150 Note 3 140 130 120 110 100 90 80 70 60 0 10 20 30 40 V<sub>R</sub>, DC REVERSE VOLTAGE (V)

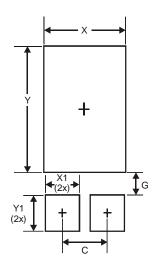
Fig. 6 Operating Temperature Derating



## **Package Outline Dimensions**



# Suggested Pad Layout



Dimensions	Value (in mm)
С	1.840
G	0.852
Х	3.360
X1	1.390
Y	4.860
Y1	1.400

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