



SD103ATW

#### SURFACE MOUNT SCHOTTKY BARRIER DIODE ARRAY

### **Features**

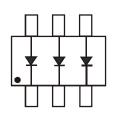
- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- Fast Switching
- Low Leakage Current
- Three Fully Isolated Schottky Diodes
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

## **Mechanical Data**

- Case: SOT-363
- Case Material: Molded Plastic, "Green" Molding Compound;
   UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity: See Diagram
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe (Lead Free Plating); Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.006 grams (Approximate)







Device Schematic

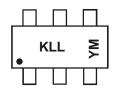
### **Ordering Information** (Note 4)

Part Number	Case	Packaging
SD103ATW-7-F	SOT-363	3,000/Tape & 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.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. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

## **Marking Information**



KLL = Product Type Marking Code YM = Date Code Marking Y = Year (ex: C = 2015) M = Month (ex: 9 = September)

#### Date Code Key

Year	2002	2003	2004	2005	2006	2007	2008		2015	2016	2017	2018	2019	2020
Code	N	Р	R	S	Т	U	V		С	D	Е	F	G	Н
Month	Jar	Fel	ь М	ar	Apr	May	Jun	Jul	Aug	Se	р	Oct	Nov	Dec
Code	1	2	;	3	4	5	6	7	8	9		0	N	D



# **Maximum Ratings** $(@T_A = +25^{\circ}C, \text{ unless otherwise specified.})$

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	>
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Forward Continuous Current (Note 5)	I <sub>FM</sub>	350	mA
Average Rectified Current (Note 5)	lo	175	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Note 5)	I <sub>FSM</sub>	1.0	Α

### **Thermal Characteristics**

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 6)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air	(Note 6)	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range		T <sub>J</sub> , T <sub>STG</sub>	-55 to +125	°C

## **Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

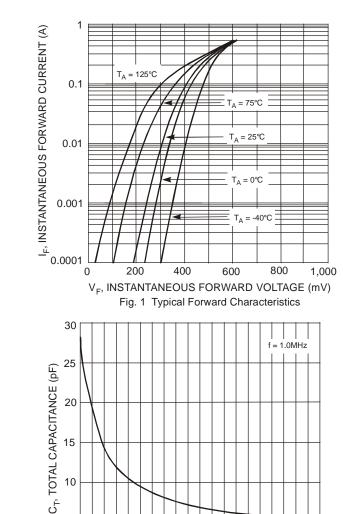
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition	
Reverse Breakdown Voltage	(Note 7)	$V_{(BR)R}$	40	_	_	V	$I_R = 100\mu A$
			_	0.27	_	V	$I_F = 1mA$
Forward Voltage Drop		VF	_	0.32	_	V	$I_F = 5mA$
Forward voltage Drop		VF	_	0.36	0.37	V	$I_F = 20mA$
			_	0.44	0.50	V	$I_F = 100 \text{mA}$
Lookaga Current	(Note 7)	1-	_	0.2	2.0	μΑ	V <sub>R</sub> = 10V
Leakage Current	(Note 7)	I <sub>R</sub>	_	0.4	5.0	μΑ	$V_R = 30V$
Total Capacitance		Ст	_	50	_	pF	$V_R = 0V$ , $f = 1.0MHz$
Reverse Recovery Time		t <sub>rr</sub>	_	10	_	ns	$\begin{split} I_F &= I_R = 10 \text{mA}, \\ I_{rr} &= 0.1 \text{ x } I_R, R_L = 100 \Omega \end{split}$

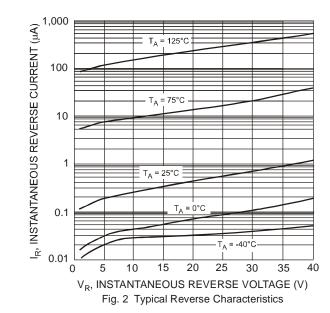
### Notes:

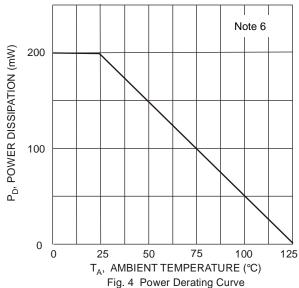
- 5. This is the maximum rating of single Diode  $(D_1 \text{ or } D_2 \text{ or } D_3)$ . In the case of using two or three diodes, the maximum ratings per diode are 75% of the ratings for single diode operation.

  6. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
- 7. Short duration pulse test used to minimize self-heating effect.









## **Package Outline Dimensions**

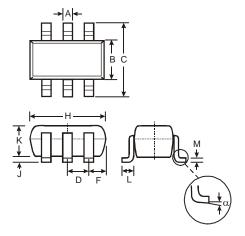
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Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.

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 $\rm V_R$ , DC REVERSE VOLTAGE (V) Fig. 3 Total Capacitance vs. Reverse Voltage

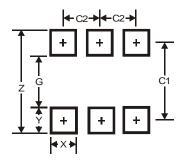


SOT363								
Dim	Min Max Typ							
Α	0.10	0.30	0.25					
В	1.15	1.35	1.30					
С	2.00	2.20	2.10					
D	0.65 Typ							
F	0.40 0.45 0.425							
Н	1.80	2.20	2.15					
7	0	0.10	0.05					
K	0.90	1.00	1.00					
L	0.25	0.40	0.30					
М	0.10	0.22	0.11					
α	0°	8°	-					
All	Dimen	sions i	n mm					



### Suggested Pad Layout

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



Dimensions	Value (in mm)
Z	2.5
G	1.3
Х	0.42
Y	0.6
С	1.9
E	0.65

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