





#### HIGH VOLTAGE DUAL SWITCHING DIODE

### **Features**

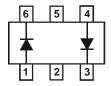
- Fast Switching Speed: max. 50ns
- High Reverse Breakdown Voltage: 300V
- Two Electrically Isolated Elements in a Single Compact Package
- Low Leakage Current: 150nA at Room Temperature
- Lead, Halogen and Antimony Free, RoHS Compliant (Note 3)
- "Green" Device (Note 4)

### **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
- Terminals: Finish Matte Tin annealed over Alloy 42 leadframe.
  Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.006 grams (approximate)



Top View



**Device Schematic** 

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

Characteristic		Symbol	Value	Unit
Ponetitivo Book Boyeroo Voltego	Single Diode	\/	300	V
Repetitive Peak Reverse Voltage	Series Connection	$V_{RRM}$	600	V
Working Peak Reverse Voltage	Single Diode	$V_{RWM}$	300	V
DC Blocking Voltage	Series Connection	$V_R$	600	V
RMS Reverse Voltage		V <sub>R(RMS)</sub>	212	V
Forward Current (Note 2)	Single Diode Loaded	1	250	mA
Forward Current (Note 2)	Double Diode Loaded	lF	140	IIIA
Non-Repetitive Peak Forward Surge Curren	I <sub>FSM</sub>	4.5	A	
Repetitive Peak Forward Current @ t = 8.3r	I <sub>FRM</sub>	625	mA	

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	$P_{D}$	300	mW
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{ hetaJA}$	417	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

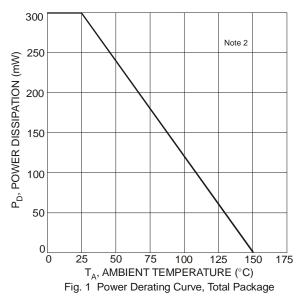
## **Electrical Characteristics** @T<sub>A</sub> = 25°C unless otherwise specified

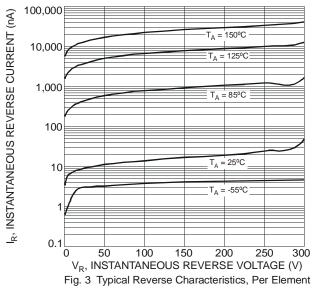
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	300	_	V	$I_R = 100 \mu A$
Forward Voltage	V <sub>F</sub>		1.1	V	$I_F = 100 \text{mA}$
		_	50	nA	$V_R = 5V$
Reverse Current (Note 1)	I <sub>R</sub>	_	150	nA	$V_{R} = 250V$
		_	75	μА	$V_R = 250V, T_J = 150^{\circ}C$
Total Capacitance	C <sub>T</sub>		2.0	pF	$V_R = 0, f = 1.0MHz$
Poverse Pessyery Time	4		50	ns	$I_F = I_R = 30 \text{mA},$
Reverse Recovery Time	t <sub>rr</sub>				$I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

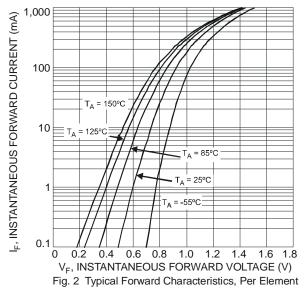
Notes:

- 1. Short duration pulse test used to minimize self-heating effect.
- 2. 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.
- 3. No purposefully added lead. Halogen and Antimony Free.
- 4. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead\_free/index.php.









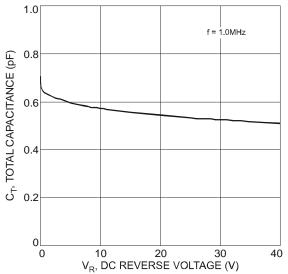


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

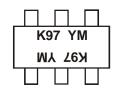
## **Ordering Information** (Note 5)

Part Number	Case	Packaging		
BAW101S-7	SOT-363	3000/Tape & Reel		

Notes:

5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

# **Marking Information**



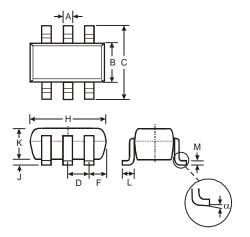
K97 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: X = 2010) M = Month (ex: 9 = September)

Date Code Key

Year	201	0	2011		2012	20	13	2014		2015		2016
Code	X		Υ		Z		4	В		С		D
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

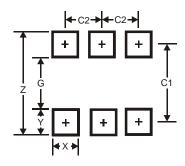


# **Package Outline Dimensions**



SOT-363							
Dim	Dim Min Max						
Α	0.10	0.30					
В	1.15	1.35					
С	2.00	2.20					
D	0.65 Typ						
F	0.40	0.45					
Н	1.80	2.20					
J	0	0.10					
K	0.90	1.00					
L	0.25	0.40					
M	0.10	0.22					
α	0°	8°					
All Dimensions in mm							

# **Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.5
G	1.3
Х	0.42
Y	0.6
C1	1.9
C2	0.65



#### 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.

#### 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 © 2010, Diodes Incorporated

www.diodes.com