



### SURFACE MOUNT SWITCHING DIODE ARRAY

## **Features**

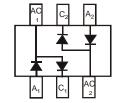
- Fast Switching Speed
- High Reverse Breakdown Voltage
- Low Leakage Current
- Low Capacitance
- Two "BAV99" Circuits In One Package
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

# **Mechanical Data**

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound;
  UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish Annealed over Alloy 42 Leadframe; (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 (3)
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)

#### **SOT363**





Datasheet

Top View Internal Schematic

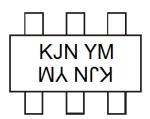
## Ordering Information (Notes 4 & 5)

Part Number	Qualificatio	n Case	Packaging
BAV99HDWQ-1	B Automotive	SOT363	10,000/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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product\_compliance\_definitions.html.
- 5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

## **Marking Information**



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

8

#### Date Code Key

Code

Ye	ar	2015		2016	2017		2018	2019		2020	2021		2022
Co	de	С		D	Е		F	G		Н	I		J
Мо	nth	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

2

3

6

Ν

0

D



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

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>R</sub> WM	100	V	
RMS Reverse Voltage	V <sub>R(RMS)</sub>	71	V	
Forward Continuous Current (Note 6)	I <sub>FM</sub>	200	mA	
Repetitive Peak Forward Current	I <sub>FRM</sub>	500	mA	
	@ t = 1.0µs		4	
Non-Repetitive Peak Forward Surge Current	@ t = 1.0ms	I <sub>FSM</sub>	1.0	Α
	@ t = 1.0s		0.5	

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	250	mW
Thermal Resistance Junction to Ambient Air (Note 6)	R <sub>0JA</sub>	500	°C/W
Thermal Resistance Junction to Solder Point (Note 7)	Rejsp	260	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

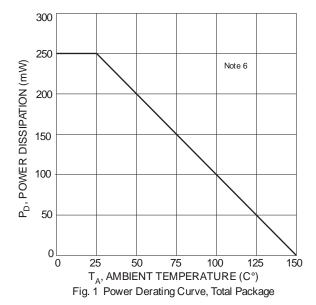
# **Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

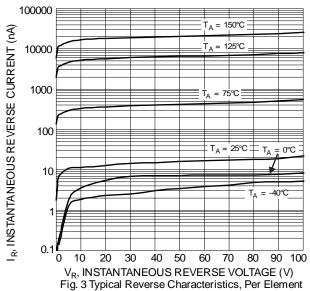
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V <sub>(BR)R</sub>	100	_	V	$I_R = 2.5\mu A$
	VF	_	0.715	V	$I_F = 1.0 \text{mA}$
Forward Voltage		_	0.855		$I_F = 10mA$
l olward voltage		_	1.0		$I_F = 50 \text{mA}$
		_	1.25		$I_F = 150 \text{mA}$
		_	0.5	μA	$V_R = 80V$
Reverse Current (Note 8)	I <sub>R</sub>	_	50		$V_R = 80V, T_J = +150$ °C
Reverse Current (Note 6)		_	30		$V_R = 25V, T_J = +150$ °C
		_	30	nA	$V_R = 25V$
Total Capacitance	CT	_	1.5	pF	$V_R = 0$ , $f = 1.0MHz$
Reverse Recovery Time	4		4.0	ns	$I_F = I_R = 10 \text{mA},$
Individual in the second of th	t <sub>RR</sub>		4.0		$I_{RR} = 0.1 \text{ x } I_{R}, R_{L} = 100\Omega$
Forward Recovery Voltage	$V_{FR}$	_	1.75	V	$I_F = 10 \text{mA}, t_R = 20 \text{ns}$

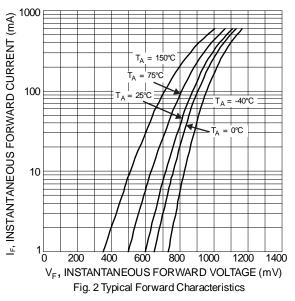
6. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html. Notes:

<sup>7.</sup> Soldering points at pins AC<sub>1</sub>, AC<sub>2</sub> and C<sub>1</sub>, C<sub>2</sub>.8. Short duration pulse test used to minimize self-heating effect.









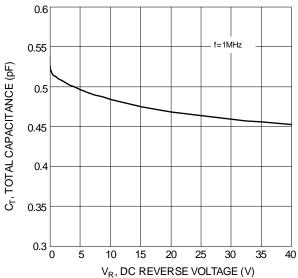


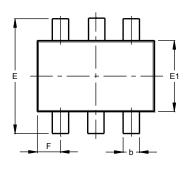
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

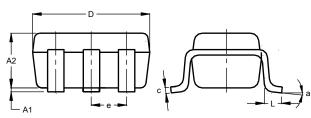


# **Package Outline Dimensions**

Please see http://www.diodes.com/package-outlines.html for the latest version.

#### **SOT363**



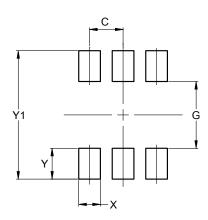


SOT363						
Dim	Min	Max	Тур			
A1	0.00	0.10	0.05			
A2	0.90	1.00	1.00			
b	0.10	0.30	0.25			
С	0.10	0.22	0.11			
D	1.80	2.20	2.15			
Е	2.00	2.20	2.10			
E1	1.15	1.35	1.30			
е	0.650 BSC					
F	0.40	0.425				
L	0.25	0.40	0.30			
а	0°	8°				
All	All Dimensions in mm					

# **Suggested Pad Layout**

Please see http://www.diodes.com/package-outlines.html for the latest version.

### **SOT363**



Dimensions	Value (in mm)
С	0.650
G	1.300
Х	0.420
Υ	0.600
Y1	2.500



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