





#### SURFACE MOUNT SWITCHING DIODE ARRAY

## **Features**

- Fast Switching Speed
- Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- Two "BAV99" Circuits In One Package
- Lead Free/RoHS Compliant (Note 1)
- Qualified to AEC-Q101 Standards for High Reliability
- "Green" Device (Notes 2 & 3)

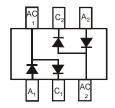
### **Mechanical Data**

- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound (Note 3). 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
- Polarity: See Diagram
- Weight: 0.006 grams (approximate)

**SOT363** 



Top View



Top View Internal Schematic

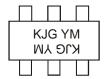
# **Ordering Information** (Note 4)

Part Number	Case	Packaging
BAV99DW-7-F	SOT363	3000/Tape & Reel

Notes:

- 1. No purposefully added lead.
- 2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
- 3. Product manufactured with Date Code UO (week 40, 2007) and newer are built with Green Molding Compound. Product manufactured prior to Date Code UO are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.
- 4. For packaging details, go to our website at http://www.diodes.com.

# **Marking Information**



KJG = Product Type Marking Code YM = Date Code Marking Y = Year (ex: N = 2002) M = Month (ex: 9 = September)

Date Code Key

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Code	М	Ν	Р	R	S	Т	U	V	W	X	Υ	Z	Α	В	С
Month	Jan	Fe	b	Mar	Apr	Мау	Ju	n	Jul	Aug	Sep	Oc	t I	Nov	Dec
Code	1	2		3	4	5	6		7	8	9	0		N	D



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

Characteristic		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		$V_{RM}$	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RRM</sub> V <sub>R</sub> WM	75	V
RMS Reverse Voltage		V <sub>R(RMS)</sub>	53	V
Forward Continuous Current (Note 5)		I <sub>FM</sub>	215	mA
Non-Repetitive Peak Forward Surge Current  @ t = 1.0µs @ t = 1.0µs @ t = 1.0µs @ t = 1.0µs		IFSM	2.0 1.0 0.5	А

## **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Power Dissipation (Note 6)	P <sub>D</sub>	300	mW
Thermal Resistance Junction to Ambient Air (Note 5)	$R_{ heta JA}$	625	°C/W
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{ heta JA}$	417	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

# Electrical Characteristics @TA = 25°C unless otherwise specified

Characteristic	Symbol Min Max Unit		Test Condition		
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	75	_	V	$I_R = 2.5 \mu A$
		_	0.715		$I_F = 1.0 \text{mA}$
Forward Voltage	V <sub>F</sub> — 0.855 V	$I_F = 10mA$			
Forward Voltage	V <sub>F</sub>	_	1.0	] v	$I_F = 50 \text{mA}$
		_	1.25		$I_F = 150 \text{mA}$
		_	2.5	μА	V <sub>R</sub> = 75V
Reverse Current (Note 7)		_	50	μ <b>A</b>	V <sub>R</sub> = 75V, T <sub>J</sub> = 150°C
Reverse Current (Note 7)	I <sub>R</sub>	_	30	μA	V <sub>R</sub> = 25V, T <sub>J</sub> = 150°C
		_	25	nA	V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>	_	2.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>		4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{rr} = 0.1 \times I_R, R_L = 100 \Omega$
<b>,</b>	-11				$I_{rr} = 0.1 \text{ x } I_{R}, R_{L} = 100\Omega$

Notes:

- 5. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com.
- 6. Device mounted on Alumina PCB, 0.4 inch x 0.3 inch x 0.024 inch; pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com.

  7. Short duration pulse test used to minimize self-heating effect.



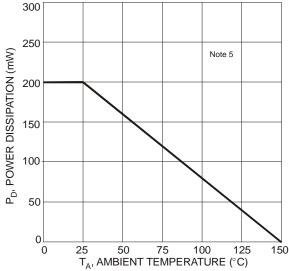
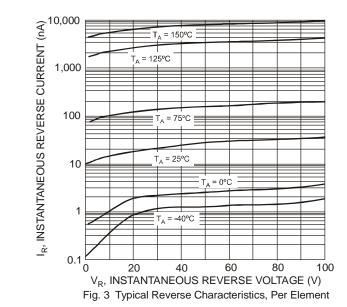
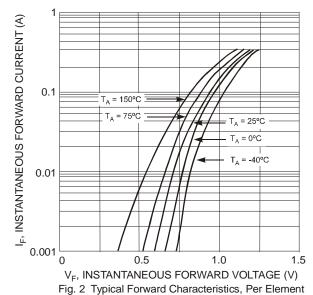


Fig. 1 Power Derating Curve, Total Package





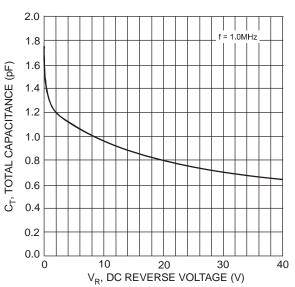
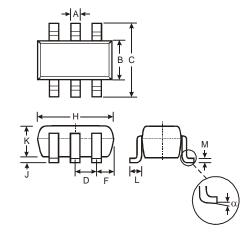


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

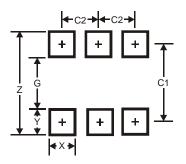
# **Package Outline Dimensions**



SOT363						
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 Di	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

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