



#### SURFACE MOUNT SWITCHING DIODE ARRAY

#### **Features**

- · Fast Switching Speed
- Low Capacitance
- Low Leakage Current
- Two "BAV70" Circuits in One Package
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen- and Antimony-Free. "Green" Device (Note 3)
- The BAV70HDWQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.

https://www.diodes.com/quality/product-definitions/

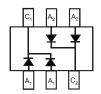
## **Mechanical Data**

- 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 Lead-Frame (Lead-Free Plating).
   Solderable per MIL-STD-202, Method 208 (§3)
- Orientation: See Diagram
- Weight: 0.006 grams (Approximate)

**SOT363** 



Top View



Top View Internal Schematic

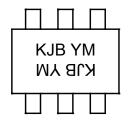
# Ordering Information (Note 4)

Ī	Part Number Qualification		Case	Packaging	
	BAV70HDWQ-13	Automotive	SOT363	10,000/Tape & Reel	

Notes:

- 1. 1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
- See https://www.diodes.com/quality/lead-free/ 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 https://www.diodes.com/design/support/packaging/diodes-packaging/.

# **Marking Information**



KJB = Product Type Marking Code YM = Date Code Marking Y = Year ex: H = 2020 M = Month ex: 9 = September

#### Date Code Key

Year	2015				2020		2021	2022		2023	2024		2025
Code C					Н		1	J		K	L		М
Month	Jan	Fe	eb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	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
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V <sub>RM</sub> V <sub>RWM</sub> V <sub>R</sub>	100	V
RMS Reverse Voltage		V <sub>R(RMS)</sub>	71	V
Forward Continuous Current (Note 5)		I <sub>FM</sub>	250	mA
Average Rectified Output Current (Note 5)		lo	125	mA
Repetitive Peak Forward Current		I <sub>FRM</sub>	450	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0µs @ t = 1.0ms @ t = 1.0s	I <sub>FSM</sub>	4 1 0.5	А

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit	
Typical Power Dissipation (Note 5)	$P_{D}$	350	mW	
Typical Thermal Resistance, Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	357	°C/W	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C	

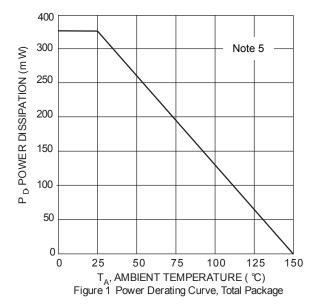
# Electrical Characteristics (@ T<sub>A</sub> = +25°C, unless otherwise specified.)

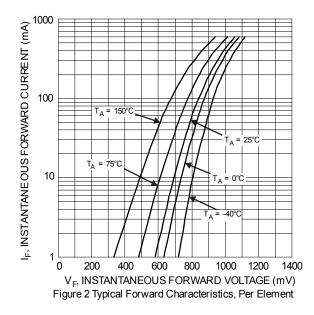
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	100	_	V	I <sub>R</sub> = 20μA
Forward Voltage	V <sub>F</sub>	l	0.715 0.855 1.0 1.25	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 150mA
Reverse Current (Note 6)	I <sub>R</sub>		0.5 100 30 30	μΑ μΑ	V <sub>R</sub> = 80V V <sub>R</sub> = 80V, T <sub>J</sub> = +150°C V <sub>R</sub> = 25V, T <sub>J</sub> = +150°C V <sub>R</sub> = 25V
Total Capacitance	C <sub>T</sub>	_	1.5	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>RR</sub>	_	4.0	ns	$I_F = I_R = 10 \text{mA},$ $I_{RR} = 0.1 \text{ x } I_R, R_L = 100 \Omega$
Forward Recovery Voltage	$V_{FR}$	_	1.75	V	I <sub>F</sub> = 10mA, t <sub>R</sub> = 20ns

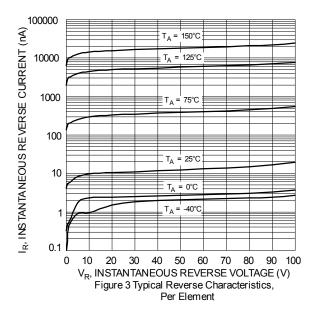
Notes:

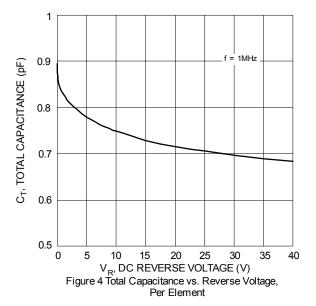
- 5. Part mounted on 1.5"x1.5" FR-4 substrate PC board, with 1"x1" 2oz Cu pad.
- ${\small 6. \ Short\ duration\ pulse\ test\ used\ to\ minimize\ self-heating\ effect.} \\$







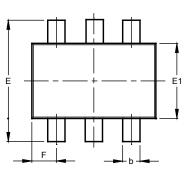


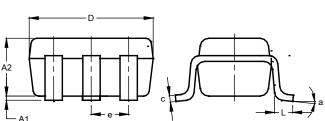




# **Package Outline Dimensions**

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





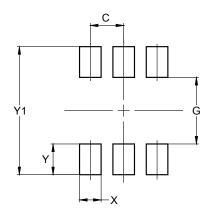
SOT363							
Dim	Min	Max	Тур				
A1	0.00	0.10	0.05				
A2	0.90	1.00	0.95				
b	0.10	0.30	0.25				
С	0.10	0.22	0.11				
D	1.80	2.20	2.15				
Е	2.00	2.20	2.10				
E1	1.15	1.35	1.30				
е	C	.650 E	SC				
F	0.40	0.45	0.425				
L	0.25	0.40	0.30				
а	0°	8°					
All Dimensions in mm							

# **Suggested Pad Layout**

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

### **SOT363**

**SOT363** 



Dimensions	Value		
Difficultions	(in mm)		
C	0.650		
G	1.300		
X	0.420		
Y	0.600		
Y1	2 500		



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