BAV70HDWQ

SURFACE MOUNT SWITCHING DIODE ARRAY

Features

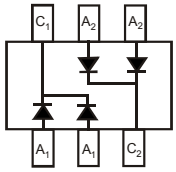
- Fast Switching Speed
- Low Capacitance
- Low Leakage Current
- Two “BAV70” Circuits in One Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **The BAV70HDWQ is suitable for automotive applications requiring specific change 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 e3
- Orientation: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363

Top View



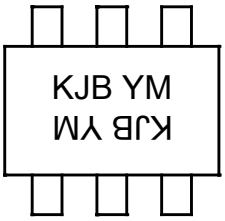
Top View
Internal Schematic

Ordering Information (Note 4)

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.
2. 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	…..	H	I	J	K	L	M

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	71	V
Forward Continuous Current (Note 5)	I_{FM}	250	mA
Average Rectified Output Current (Note 5)	I_O	125	mA
Repetitive Peak Forward Current	I_{FRM}	450	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0µs @ t = 1.0ms @ t = 1.0s	I_{FSM}	4 1 0.5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Power Dissipation (Note 5)	P_D	350	mW
Typical Thermal Resistance, Junction to Ambient Air (Note 5)	$R_{\theta JA}$	357	°C/W
Operating and Storage Temperature Range	T_J , T_{STG}	-55 to +150	°C

Electrical Characteristics (@ T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	100	—	V	I_R = 20µA
Forward Voltage	V_F	—	0.715 0.855 1.0 1.25	V	I_F = 1.0mA I_F = 10mA I_F = 50mA I_F = 150mA
Reverse Current (Note 6)	I_R	—	0.5 100 30 30	µA µA µA nA	V_R = 80V V_R = 80V, T_J = +150°C V_R = 25V, T_J = +150°C V_R = 25V
Total Capacitance	C_T	—	1.5	pF	V_R = 0, f = 1.0MHz
Reverse Recovery Time	t_{RR}	—	4.0	ns	I_F = I_R = 10mA, I_{RR} = 0.1 x I_R, R_L = 100Ω
Forward Recovery Voltage	V_{FR}	—	1.75	V	I_F = 10mA, t_R = 20ns

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

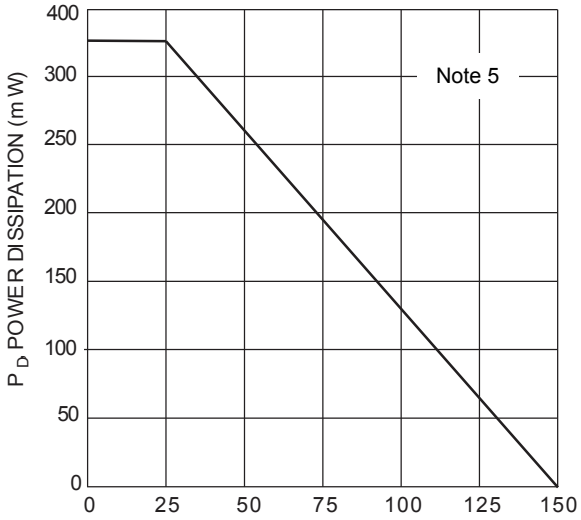


Figure 1 Power Derating Curve, Total Package

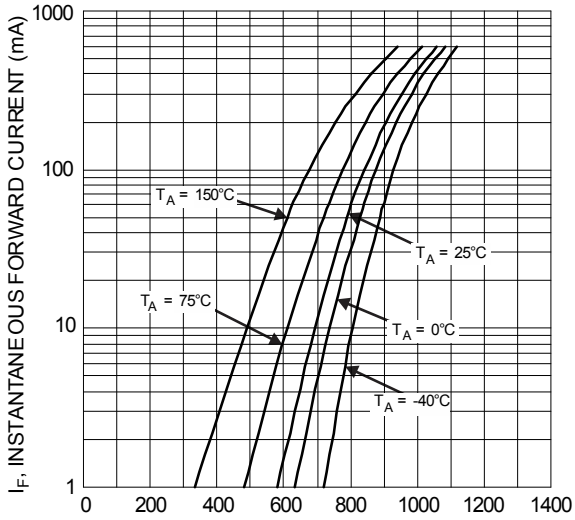


Figure 2 Typical Forward Characteristics, Per Element

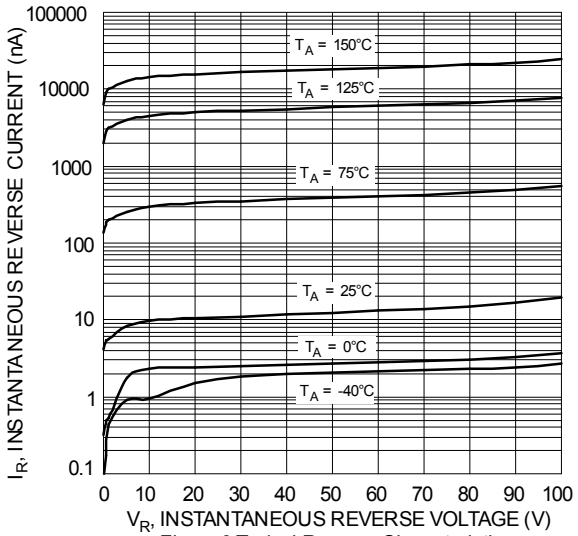


Figure 3 Typical Reverse Characteristics, Per Element

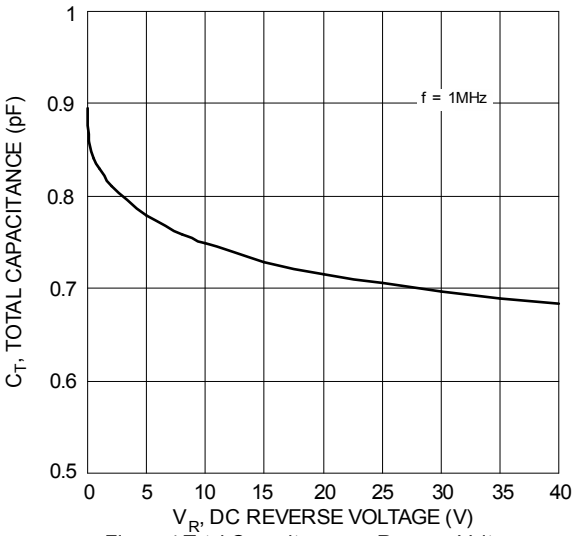
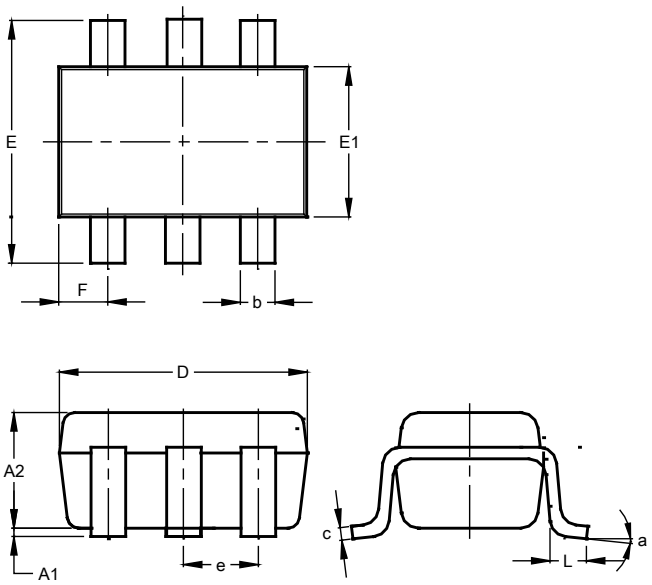


Figure 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

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

SOT363

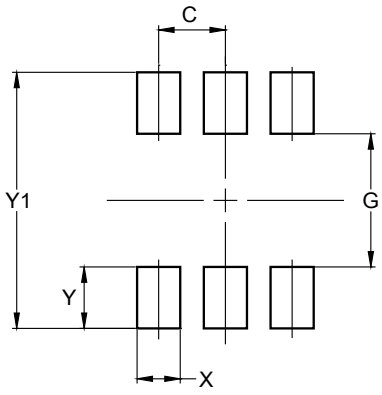


SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500

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