

**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/>

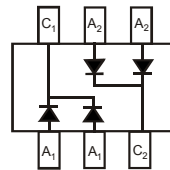
**Mechanical Data**

- 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



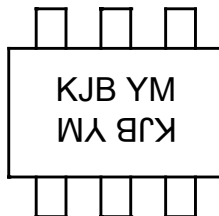
Top View  
Internal Schematic

**Ordering Information** (Note 4)

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

- Notes:
1. 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** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	100	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
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	$I_{FSM}$	@ $t = 1.0\mu\text{s}$	4
		@ $t = 1.0\text{ms}$	1
		@ $t = 1.0\text{s}$	0.5

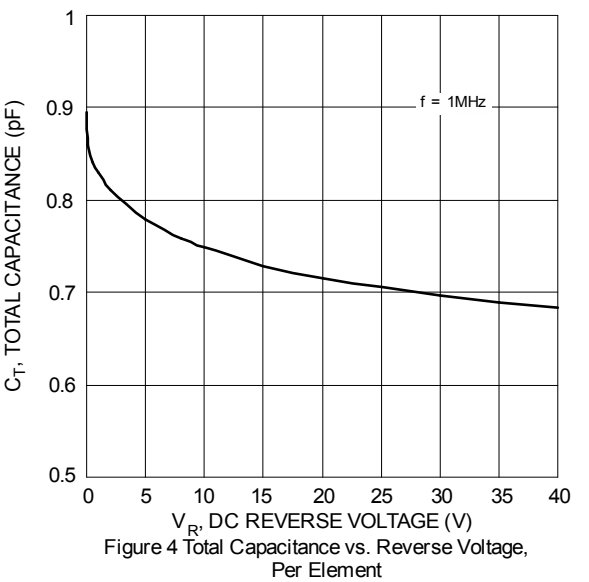
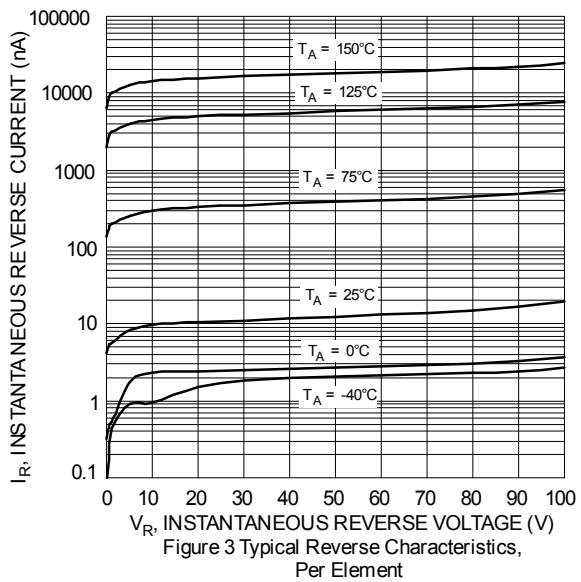
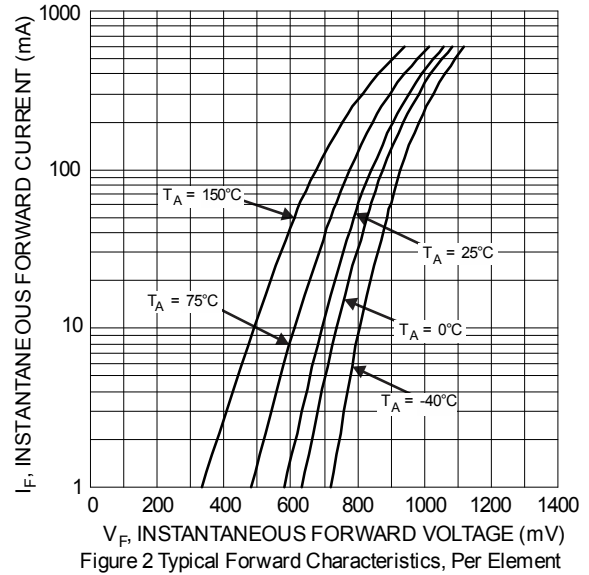
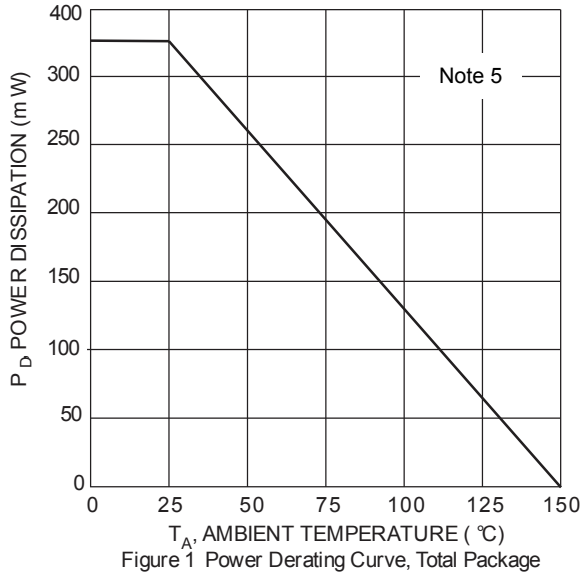
**Thermal Characteristics**

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	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

**Electrical Characteristics** (@  $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

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

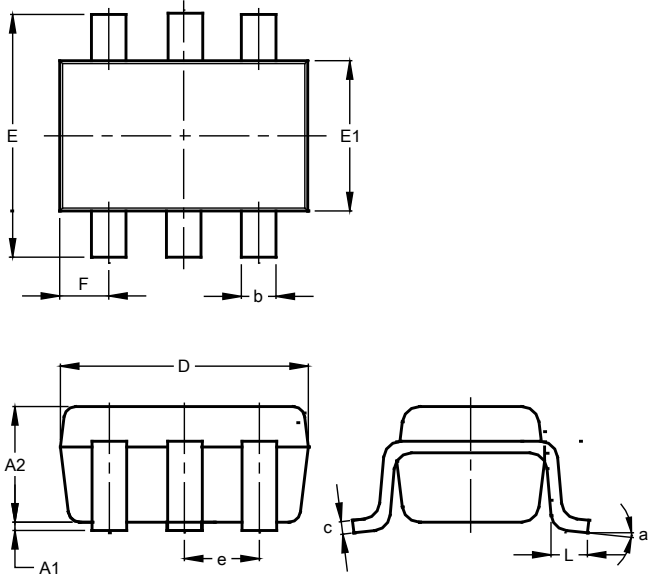
Notes: 5. Part mounted on 1.5"x1.5" FR-4 substrate PC board, with 1"x1" 2oz Cu pad.  
6. Short duration pulse test used to minimize self-heating effect.



**Package Outline Dimensions**

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

**SOT363**

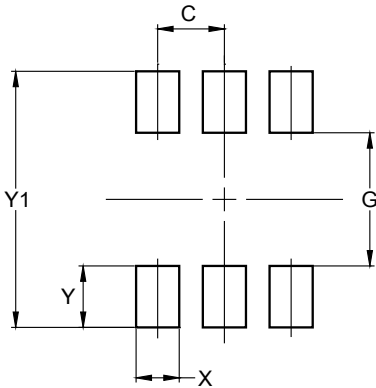


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

**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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