



**THE DATASHEET OF
BAV99HDW-13**



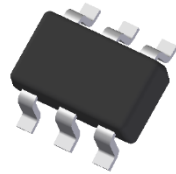
Features

- 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)**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.**
<https://www.diodes.com/quality/product-definitions/>
- **An automotive-compliant part is available under separate datasheet (BAV99HDWQ)**

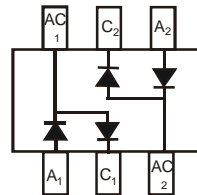
Mechanical Data

- Package: SOT363
- Package 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 (E3)
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363



Top View



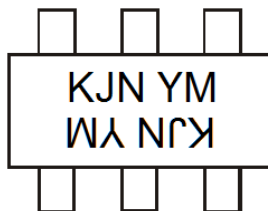
Top View
Internal Schematic

Ordering Information (Notes 4)

Part Number	Package	Packing	
		Qty.	Carrier
BAV99HDW-13	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



KJN = Product Type Marking Code
 YM = Date Code Marking
 Y = Year (ex: K = 2023); A Bar on Top of the “Y” Denotes AT Site
 M = Month (ex: 9 = September)

Date Code Key

Year	2015	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Code	C	K	L	M	N	P	R	S	T	U	V

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	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}	200	mA
Repetitive Peak Forward Current	I _{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	I _{FSM}	@ t = 1.0μs	4
		@ t = 1.0ms	1.0
		@ t = 1.0s	0.5

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P _D	250	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R _{θJA}	500	°C/W
Thermal Resistance Junction to Solder Point (Note 6)	R _{θJSP}	260	°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 7)	V _{(BR)R}	100	—	V	I _R = 2.5μA
Forward Voltage	V _F	—	0.715	V	I _F = 1.0mA
		—	0.855		I _F = 10mA
		—	1.0		I _F = 50mA
		—	1.25		I _F = 150mA
Reverse Current (Note 7)	I _R	—	0.5	μA	V _R = 80V
		—	50		V _R = 80V, T _J = +150°C
		—	30		V _R = 25V, T _J = +150°C
		—	30	nA	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 = 10 mA; t _R = 20ns

- Notes:
- 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>.
 - Soldering points at pins AC₁, AC₂ and C₁, C₂.
 - Short duration pulse test used to minimize self-heating effect.

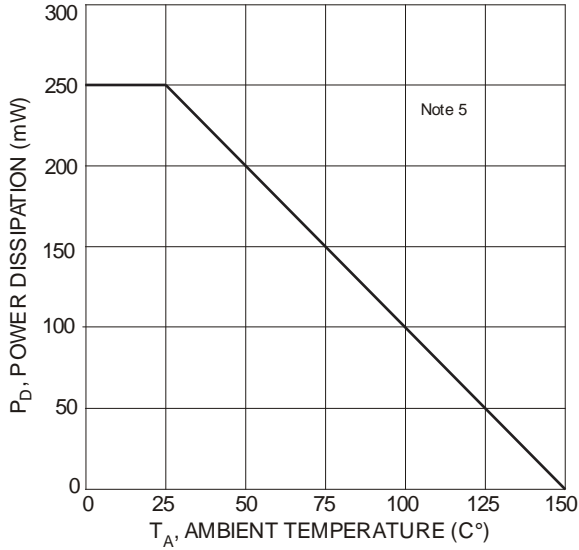


Fig. 1 Power Derating Curve, Total Package

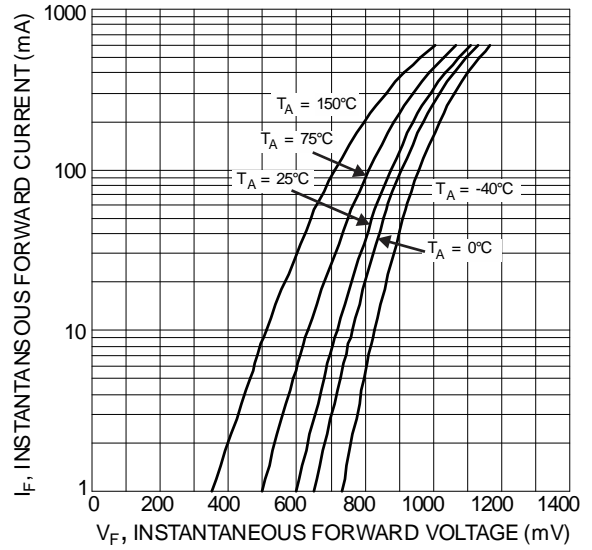


Fig. 2 Typical Forward Characteristics

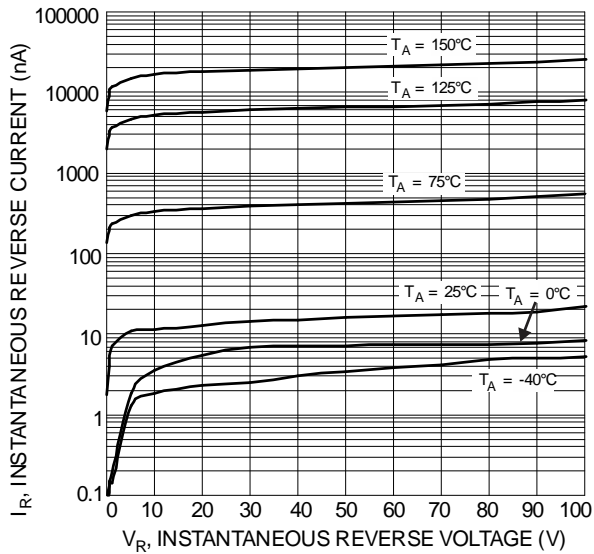


Fig. 3 Typical Reverse Characteristics, Per Element

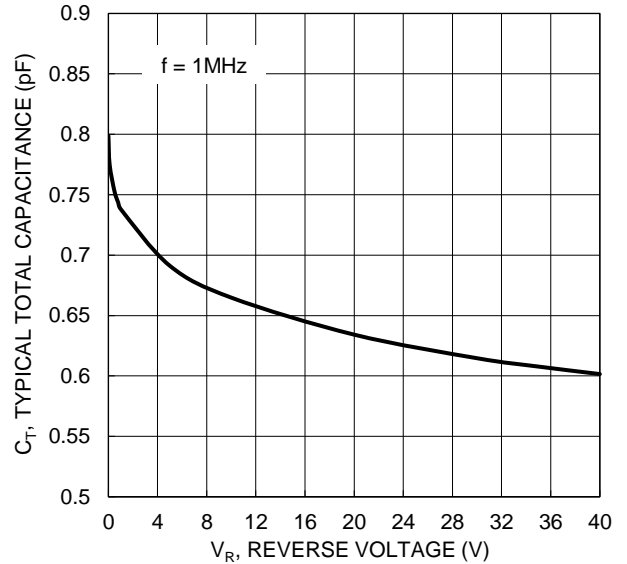
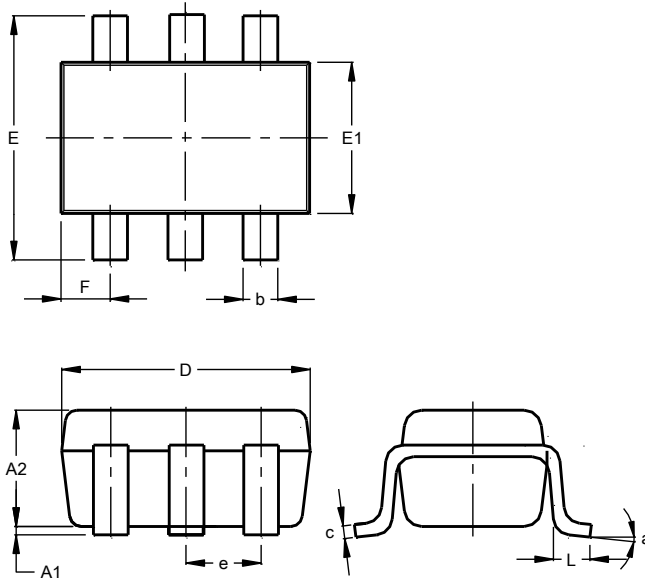


Fig. 4 Typical Total Capacitance

Package Outline Dimensions

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

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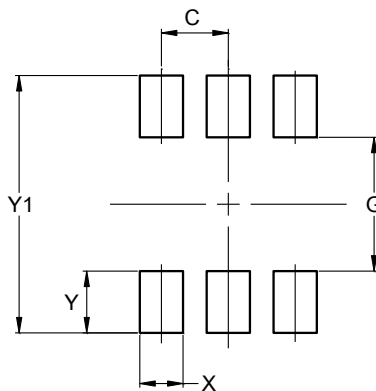


SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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