Features

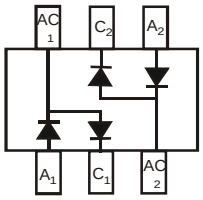
- Fast Switching Speed
- High Reverse Breakdown Voltage
- Low Leakage Current
- Low Capacitance
- Two “BAV99” Circuits In One Package
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

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 Leadframe; (Lead-Free Plating). Solderable per MIL-STD-202, Method 208 e3
- Polarity: See Diagram
- Weight: 0.006 grams (Approximate)

SOT363

Top View



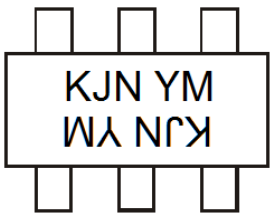
Top View
Internal Schematic

Ordering Information (Notes 4 & 5)

Part Number	Qualification	Case	Packaging
BAV99HDWQ-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) compliant.
2. See http://www.diodes.com/quality/lead_free.html 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product_compliance_definitions.html.
5. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information



KJN = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: C = 2015)
M = Month (ex: 9 = September)

Date Code Key

Year	2015	2016	2017	2018	2019	2020	2021	2022
Code	C	D	E	F	G	H	I	J

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 6)		I_{FM}	200	mA
Repetitive Peak Forward Current		I_{FRM}	500	mA
Non-Repetitive Peak Forward Surge Current	@ t = 1.0µs	I_{FSM}	4	A
	@ t = 1.0ms		1.0	
	@ t = 1.0s		0.5	

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	250	mW
Thermal Resistance Junction to Ambient Air (Note 6)	$R_{\theta JA}$	500	°C/W
Thermal Resistance Junction to Solder Point (Note 7)	$R_{\theta JSP}$	260	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	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 8)	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 = 10mA, t_R = 20ns

Notes: 6. 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.
7. Soldering points at pins AC_1, AC_2 and C_1, C_2.
8. Short duration pulse test used to minimize self-heating effect.

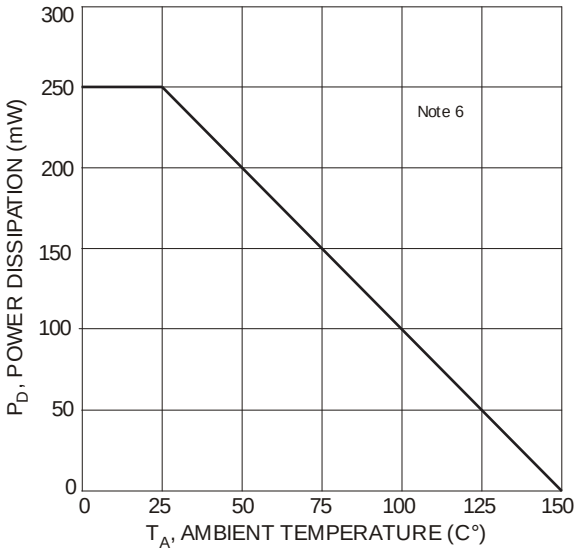


Fig. 1 Power Derating Curve, Total Package

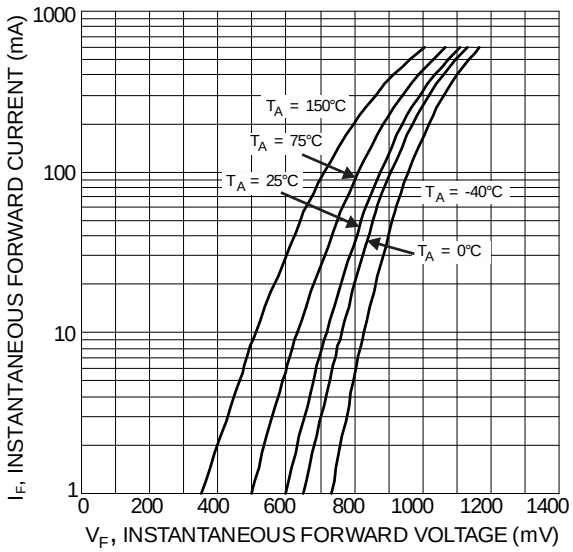


Fig. 2 Typical Forward Characteristics

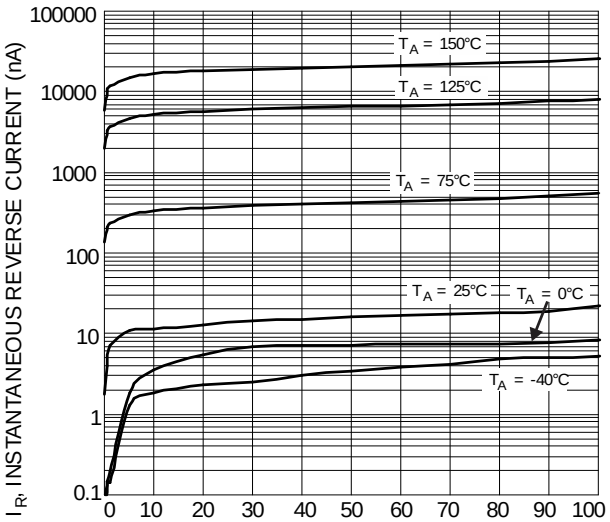


Fig. 3 Typical Reverse Characteristics, Per Element

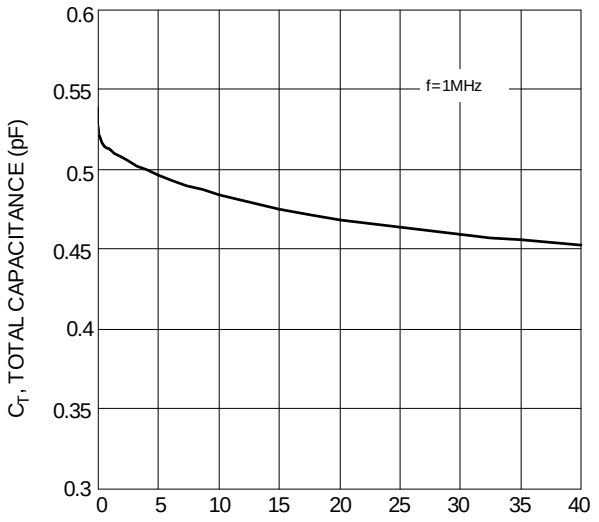
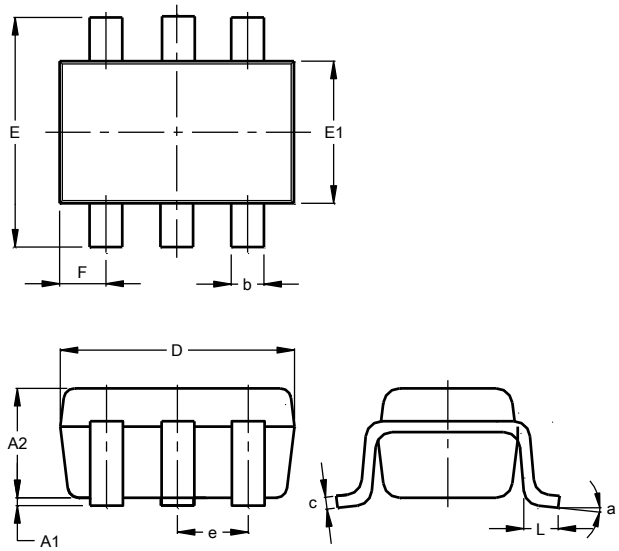


Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Package Outline Dimensions

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

SOT363

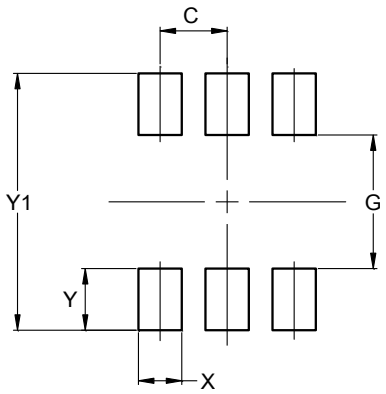


SOT363			
Dim	**Min**	**Max**	**Typ**
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

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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