BAV70DW/BAV99DW/BAW56DW
BAV99BRW/BAV756DW/BAW567DW

List

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150mA Surface Mount
Switching Diode Array - 100V

Features

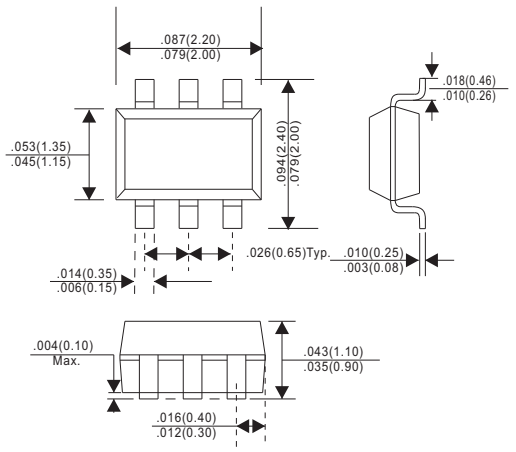
- Fast speed switching.
- For general purpose switching application.
- High conductance.
- Easily connected as full wave bridge
- Silicon epitaxial planar chip.
- Lead-free parts meet RoHS requirments.
- Suffix "-H" indicates Halogen-free parts, ex. BAV70DW-H

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-363
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any
- Weight : Approximated 0.006 gram

Package outline

SOT-363



Dimensions in inches and (millimeters)

Maximum ratings (AT T_A=25°C unless otherwise noted)

PARAMETER	Symbol	Limit	UNIT
Non-repetitive peak reverse voltage	V_{RM}	100	V
Peak repetitive reverse voltage DC blocking voltage	V_{RRM} V_R	75	V
RMS reverse voltage	$V_{R(RSM)}$	53	V
Forward continuous current	I_{FM}	300	mA
Average rectified output current (Note 1, 3)	I_O	150	mA
Non-repetitive peak forward surge current 8.3ms	I_{FSM}	2.0	A
Typical thermal resistance junction to ambient (Note 1, 3)	$R_{\theta JA}$	625	°C/W
Power dissipation(Note 1, 3)	P_D	200	mW
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

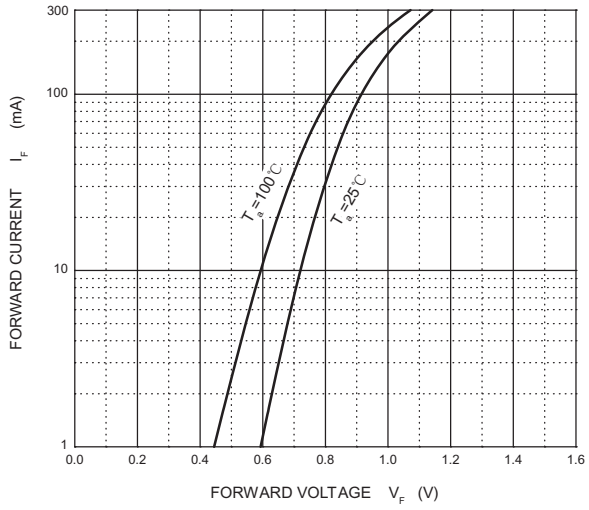
Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER		Symbol	Min	Max	UNIT
Reverse breakdown voltage	at I_R = 2.5μA	V_{BR}	75		V
Reverse leakage current (Note 2)	at V_R = 75V at V_R = 20V	I_R		2.5 25	μA nA
Total capacitance, V_R = 0V, f = 1.0MHz		C_D		2.0	pF
Reverse recovery time, I_F = I_R = 10mA, I_{RR} = 0.1xI_R, R_L = 100Ω		t_{rr}		4.0	ns
Forward voltage (Note 2)	at I_F = 1.0mA at I_F = 10mA at I_F = 50mA at I_F = 150mA	V_F		715 855 1000 1250	mV

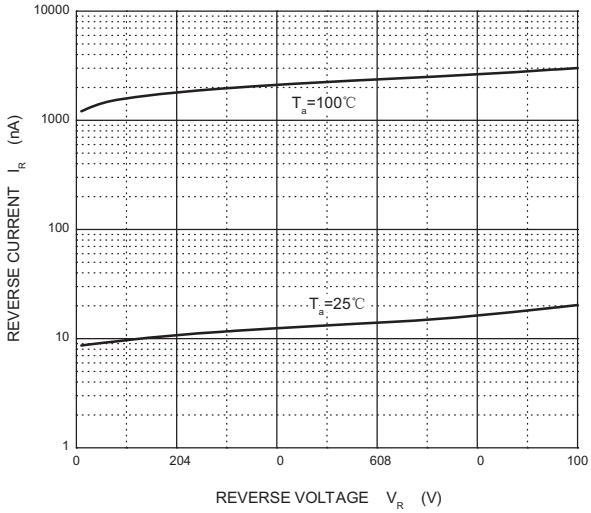
Notes 1: Device mounted on FR-4 PC board with recommended pad layout
2: Short duration test pulse used to minimize self-heating effect.
3: One or more diodes loaded.

Rating and characteristic curves for each diode (BAV70DW/BAV99DW/BAW56DW/BAV99BRW/BAV756DW/BAW567DW)

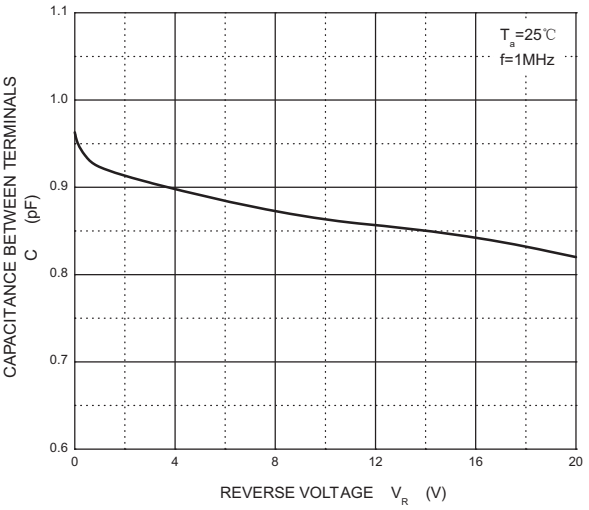
Forward Characteristics



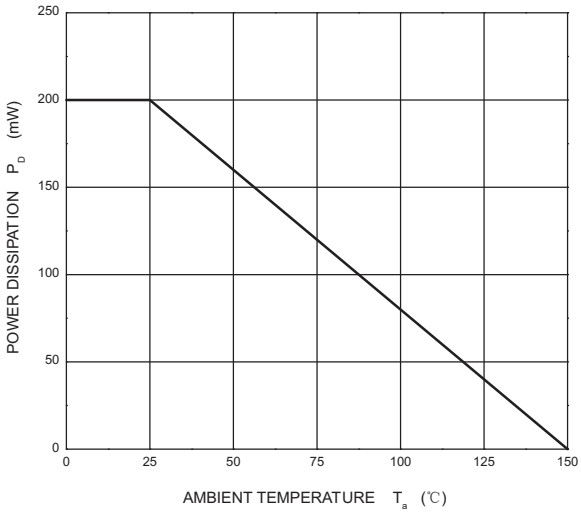
Reverse Characteristics



Capacitance Characteristics



Power Derating Curve



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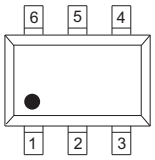
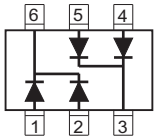
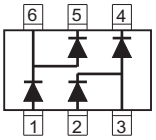
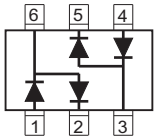
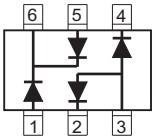
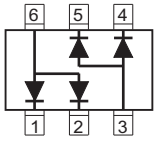
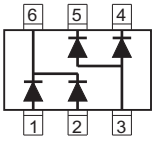
Pinning information

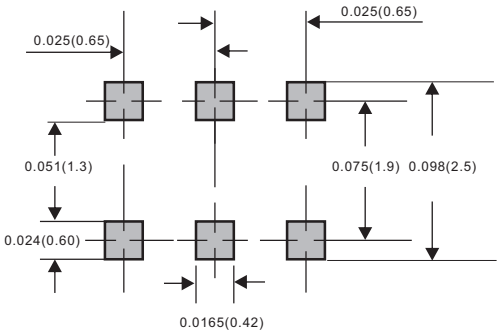
Simplified outline



Type number	Marking code	Symbol	Type number	Marking code	Symbol
BAV70DW	KJA		BAV99BRW	KGJ	
BAV99DW	KJG		BAV756DW	KCA	
BAW56DW	KJC		BAW567DW	KAC	

Suggested solder pad layout

SOT-363



Dimensions in inches and (millimeters)

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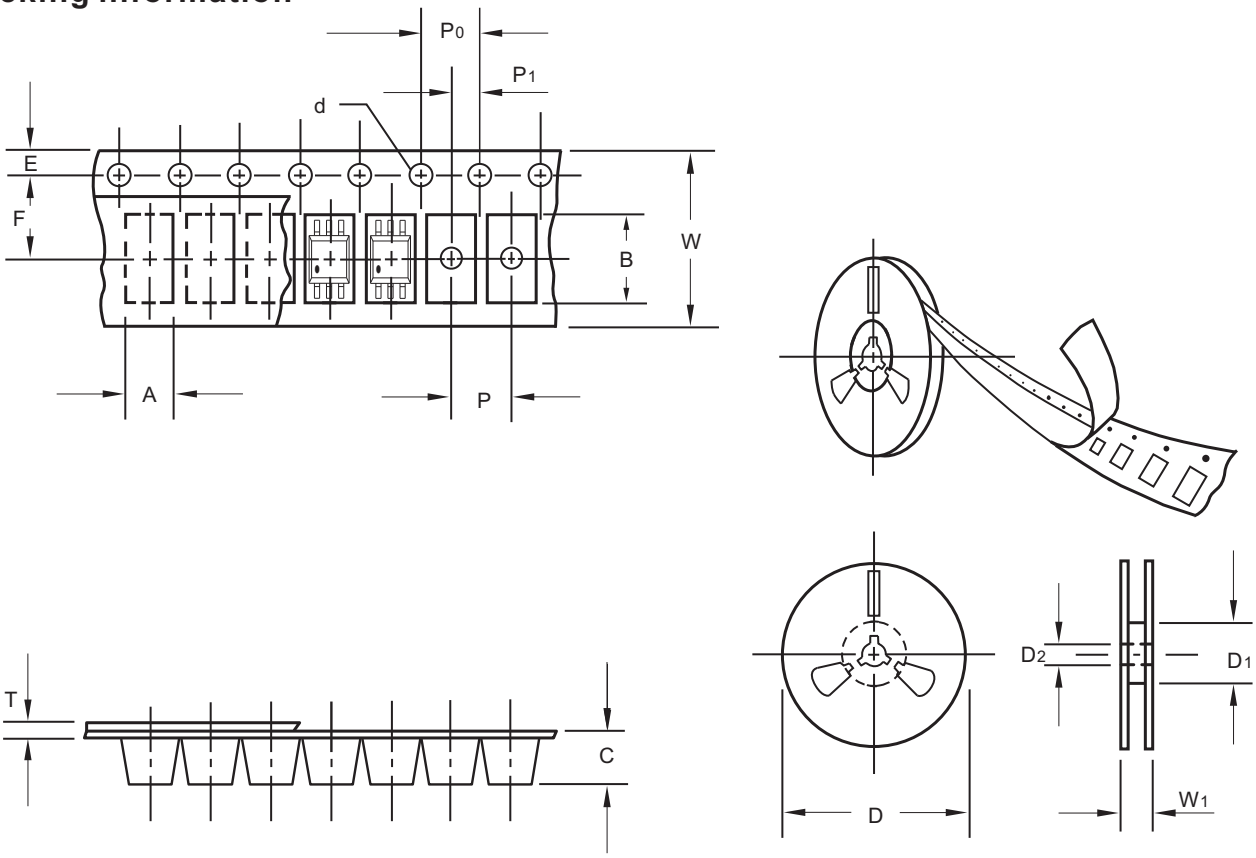
Packing information



unit:mm

Item	Symbol	Tolerance	SOT-363
Carrier width	A	0.1	2.25
Carrier length	B	0.1	2.55
Carrier depth	C	0.1	1.20
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D_1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D_1	min	54.40
Feed hole diameter	D_2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P_0	0.1	4.00
Embossment center	P_1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W_1	1.0	11.40

Note:Devices are packed in accor dance with EIA standar RS-481-A and specifications listed above.

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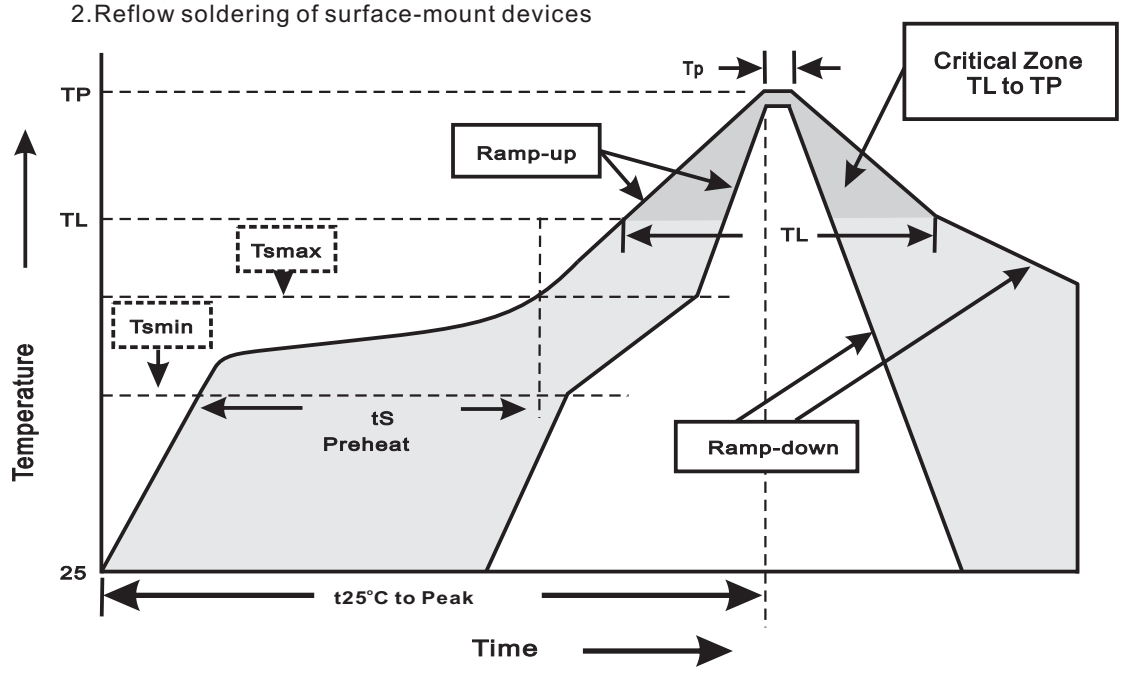
Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-363	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000	9.50

Suggested thermal profiles for soldering processes

1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	 217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec.	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=150°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°C, I_F = I_O On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	15P_{SIG} at T_A=121°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Forward Surge	Peak Forward Current	MIL-STD-750D METHOD-4066-2
9. Humidity	at T_A=85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
10. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031