BAV23D

List

BAV23D

400mA 200V Dual Switching Diode

Features

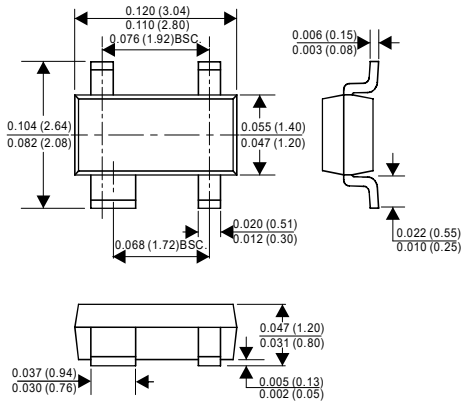
- High voltage switching.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates Halogen-free part, ex. BAV23D-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant.
- Case : Molded plastic, SOT-143.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline

SOT-143



Dimensions in inches and (millimeters)

Maximum ratings and electrical characteristics (At T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	250	V
Reverse voltage	V_R	200	V
Continuous forward current	I_F	400	mA
Repetitive peak forward current	I_{FSM}	625	mA
Non-repetitive peak forward surge current (t = 10ms)	I_{FSM}	1.7	A
Non-repetitive peak forward surge current (t = 100μs)		3	
Non-repetitive peak forward surge current (t = 1μs)		9	
Power dissipation	P_{tot}	350	mW
Thermal resistance, junction to ambient	$R_{\theta JA}$	357	°C/W
Operating junction temperature	T_J	+150	°C
Storage temperature range	T_{STG}	-65 to +150	°C

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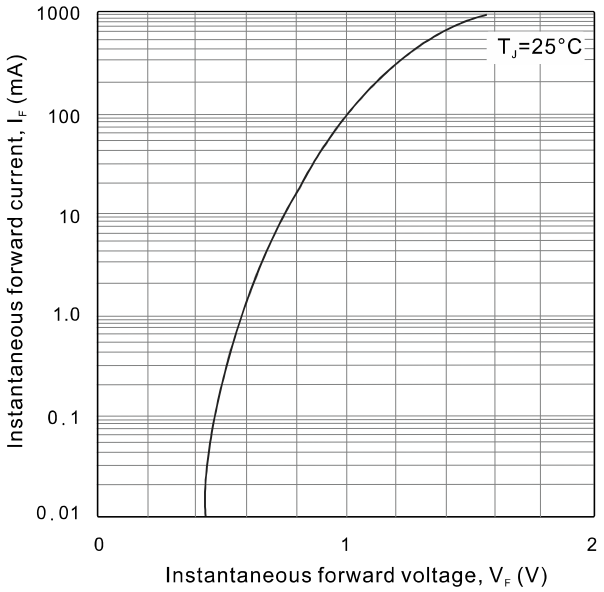
Electrical characteristics (At T_A=25°C unless otherwise noted)

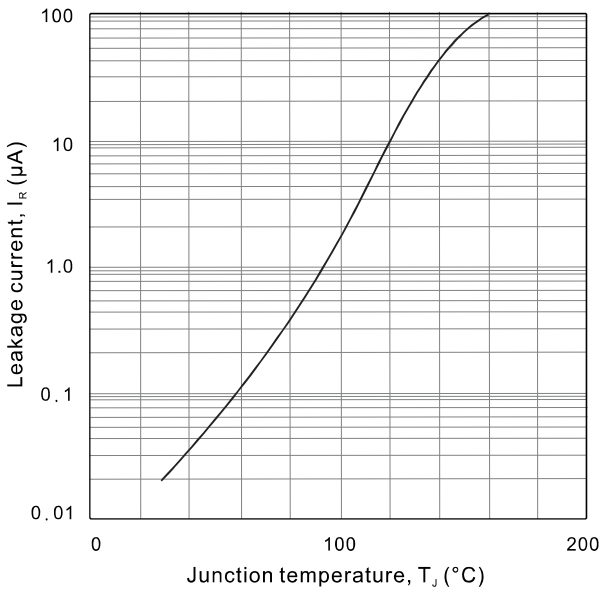
Parameter	Conditions	Symbol	Min.	Type.	Max.	Unit
Forward voltage	I_F = 100mA	V_F			1	V
	I_F = 200mA				1.25	
Reverse breakdown voltage	I_R = 100μA	$V_{(BR)R}$	250			V
Reverse current	V_R = 200V, T_J=25°C	I_R			100	nA
	V_R = 200V, T_J=150°C				100	μA
Reverse recovery time	I_F = I_R = 30mA, R_L = 100Ω, I_{rr} = 0.1 x I_R	t_{rr}			50	ns
Total capacitance	V_R = 0V, f = 1.0MHz	C_T			5	pF

Rating and characteristic curves

Forward characteristics



Leakage current vs. Junction temperature



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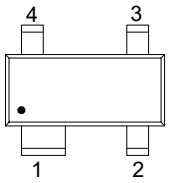
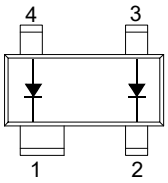
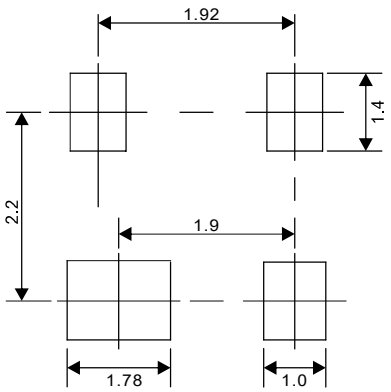
Pinning information

Pin	Simplified outline	Symbol
Pin 1, 2 Cathode Pin 3, 4 Anode		

Marking

Type number	Marking code
BAV23D	KT8

Suggested solder pad layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: 0.05mm.
3. The pad layout is for reference purposes only.

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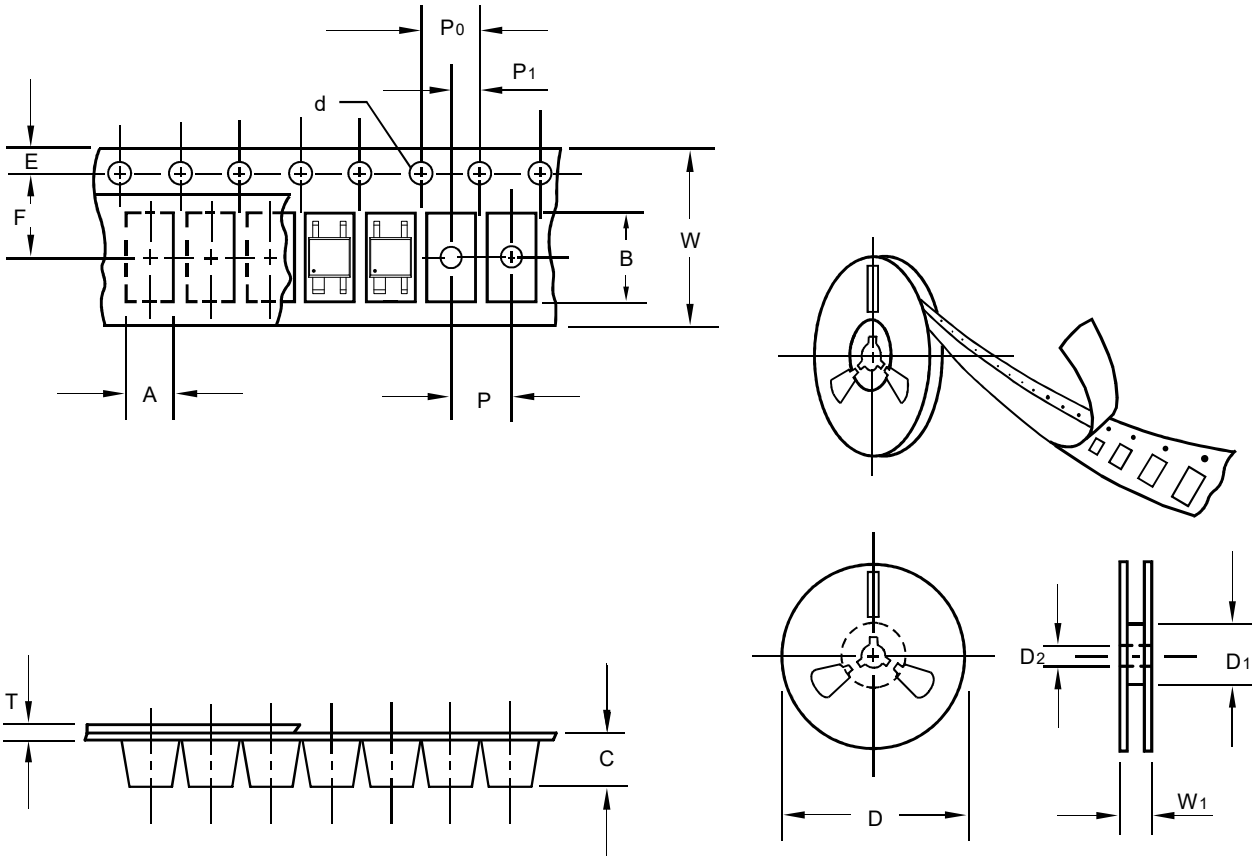
Packing information



unit:mm

Item	Symbol	Tolerance	SOT-143
Carrier width	A	0.1	3.19
Carrier length	B	0.1	2.80
Carrier depth	C	0.1	1.31
Sprocket hole	d	0.1	1.50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D_1	min	54.40
Feed hole diameter	D_2	0.2	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	0.22
Tape width	W	0.3	8.00
Reel width	W_1	1.0	9.50

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

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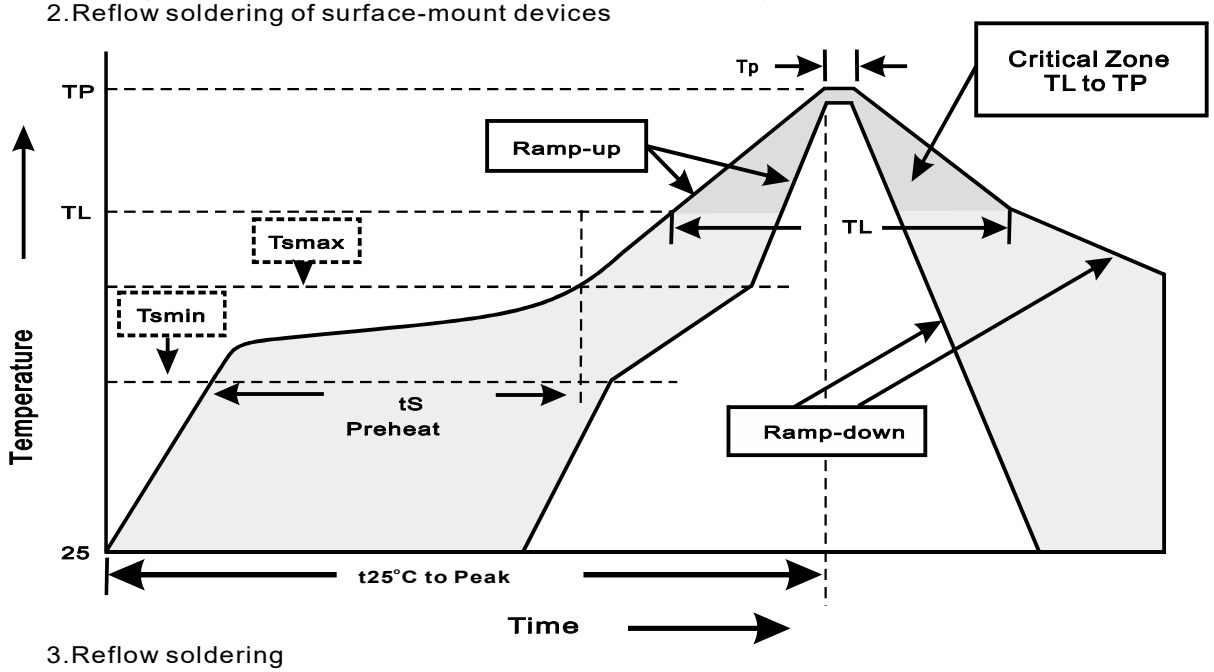
Reel packing

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)
SOT-143	7"	3,000	4.0	30,000	183*123*183	178	382*257*387	240,000

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