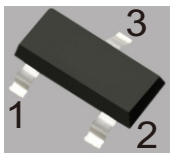
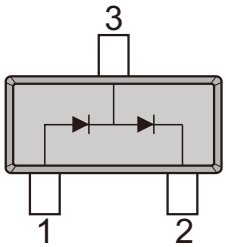
Switching Diodes

PINNING

Pin	Symbol	Description
1	A1	Anode
2	K2	Cathode
3	K1,A2	Anode,Cathode



Simplified outline SOT-23 and symbol



Automotive Grade

Features

- Fast Switching Speed
- Low Forward Voltage
- Fast Reverse Recovery: Maximum of 4ns
- Low Capacitance: Maximum of 1.5pF
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- Totally Lead-Free & Fully RoHS Compliant (Notes 1)
- Halogen and Antimony “Green” Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability(Note 3)
- PPAP Capable (Note 4)

Mechanical Date

- Case: SOT-23
- Case Material: Molded Plastic, “Green” Molding Compound; UL Flammability Classification Rating 94V-0

MAXIMUM RATINGS(Ta=25℃ unless otherwise noted)

Parameter		Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage		V_{RM}	100	V
DC Blocking Voltage		V_R	100	V
Average Rectified Forward Current		$I_{F(AV)}$	215	mA
Non-Repetitive Peak Forward Surge Current	@t=1s	I_{FSM}	0.5	A
	@t=1ms		1	
	@t=1us		4	
Power Dissipation		P_D	250	mW
Thermal Resistance from Junction to Ambient		R_{thJA}	500	℃/W
Operation Junction and Storage Temperature Range		T_J,T_{STG}	-55 ~ +150	℃

ELECTRICAL CHARACTERISTICS(Ta=25℃ unless otherwise noted)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	I_R=100uA	100			V
Forward voltage	V_{F1}	I_F=1 mA			0.715	V
	V_{F2}	I_F=10mA			0.855	V
	V_{F2}	I_F=50mA			1.00	V
	V_{F3}	I_F=150mA			1.25	V
Reverse current	I_{R1}	V_R=20V Tj=25°C			0.03	uA
	I_{R2}	V_R=80V Tj=25°C			0.5	uA
	I_{R1}	V_R=25V Tj=150°C			30	uA
	I_{R2}	V_R=80V Tj=150°C			50	uA
Capacitance between terminals	C_T	V_R=0V, f=1MHz			1.5	pF
Reverse recovery time	t_{rr}	I_F=10mA, Irr=0.1×I_R R_L=100Ω, V_R=6V			4.0	ns

Notes
1.No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2.Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine,<900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
3.Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q10x and standard products are electrically and thermally the same,except where specified.
4.P.C.B. mounted with 5*5mm copper pad areas.

Fig.1 Power Derating Curve

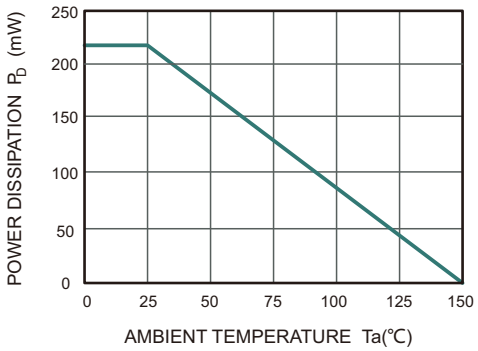


Fig.2 Reverse Characteristics

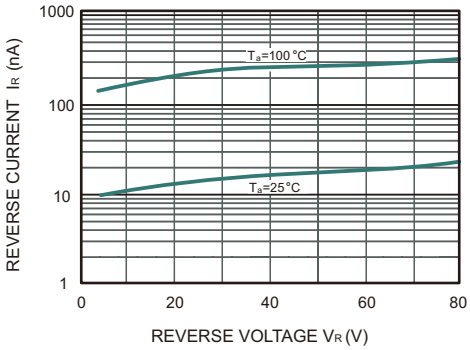


Fig.3 Forward Characteristics

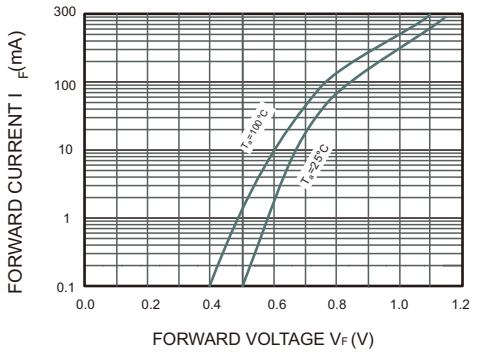
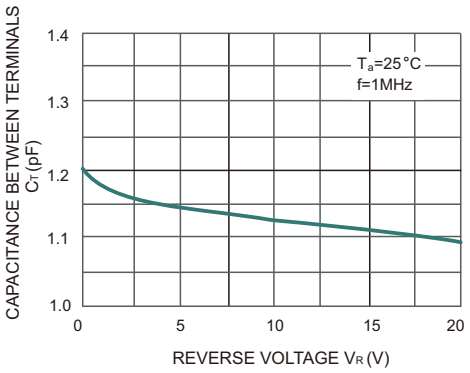
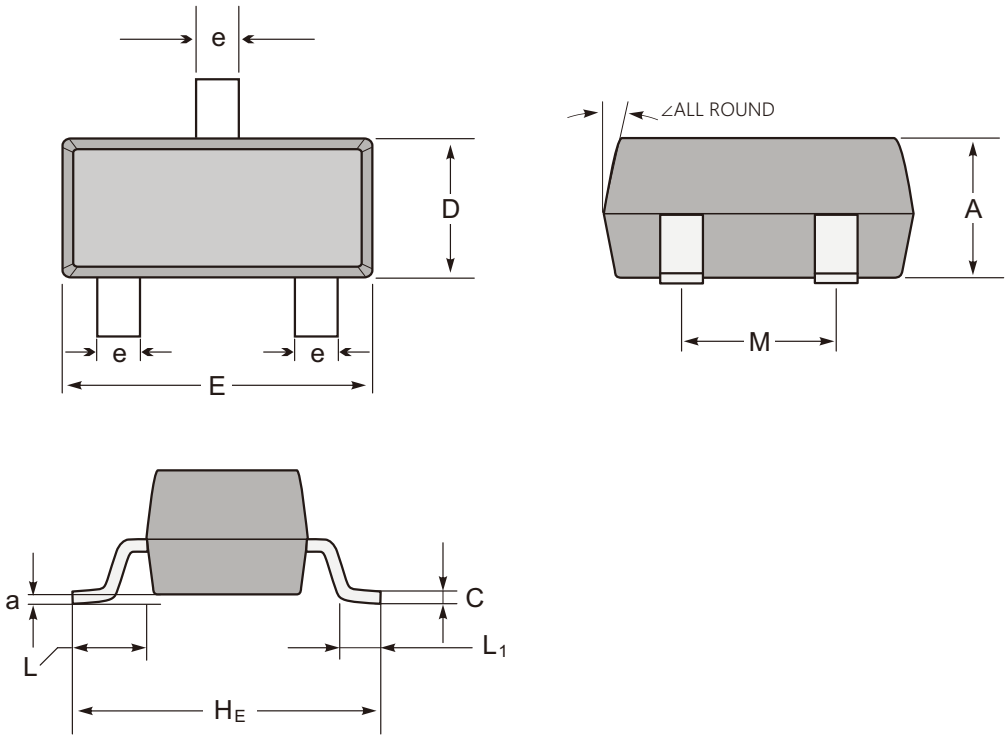


Fig.4 Capacitance Characteristics



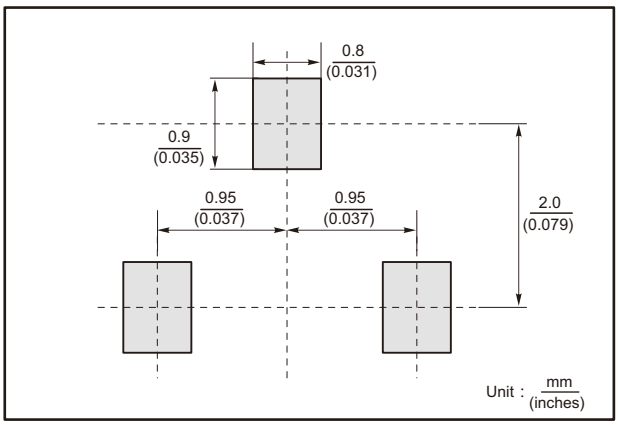
SOT-23 Package Outline Dimensions



SOT-23 mechanical data

UNIT		A	C	D	E	HE	e	M	L	L1	a	∠
mm	max	1.1	0.20	1.4	3.0	2.6	0.6	1.95	0.55 (ref)	0.36 (ref)	0.15	12°
	min	0.9	0.08	1.2	2.8	2.2	0.35	1.7			0.0	
mil	max	43	7.9	55	118	102	24	77	22 (ref)	14 (ref)	6	
	min	35	3.1	47	110	87	13	67			0.0	

The recommended mounting pad size



Marking

Type number	Marking code
AT-BAV99WD	A7

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