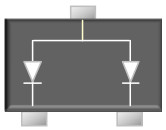
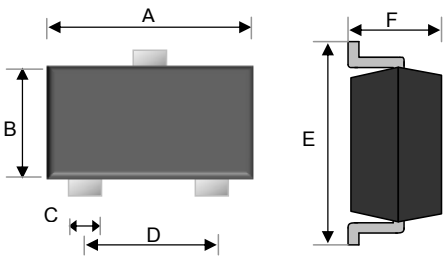
TAIWAN SEMICONDUCTOR

AZ23C2V7-AZ23C51
300mW, Dual SMD Zener Diode

Small Signal Diode



SOT-23



Features

- ✧Wide zener voltage range selection : 2.7V to 51V
- ✧V_Z Tolerance ≦ ±5%
- ✧Moisture sensitivity level 1
- ✧Matte Tin(Sn) lead finish
- ✧Pb free version and RoHS compliant
- ✧Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

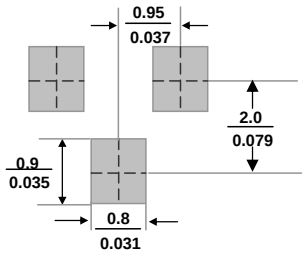
- ✧Case : Flat lead SOD-123 small outline plastic package
- ✧Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧High temperature soldering guaranteed: 260°C/10s
- ✧Weight : 8.85±0.5 mg

Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.80	3.00	0.110	0.118
B	1.20	1.40	0.047	0.055
C	0.30	0.50	0.012	0.020
D	1.80	2.00	0.071	0.079
E	2.25	2.55	0.089	0.100
F	0.90	1.20	0.035	0.043

Ordering Information

Part No.	Package code	Package	Packing
AZ23C2V7-51	RF	SOT-23	3Kpcs / 7" Reel
AZ23C2V7-51	RFG	SOT-23	3Kpcs / 7" Reel

Suggested PAD Layout



Maximum Ratings and Electrical Characteristics

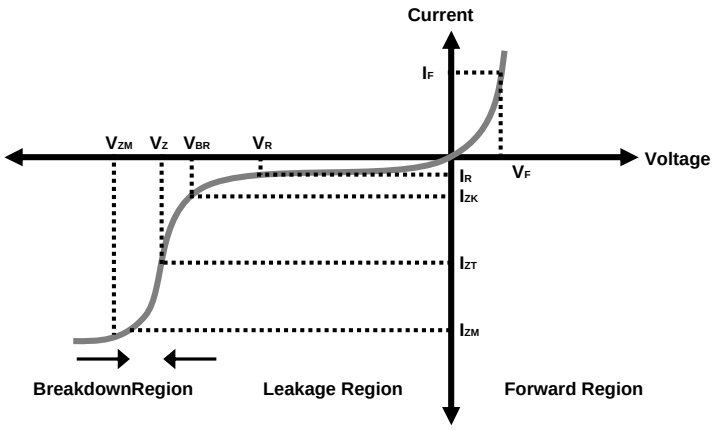
Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Power Dissipation	P_D	300	mW
Thermal Resistance (Junction to Ambient) (Note 1)	RθJA	420	°C/W
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

Notes:1. Valid provided that electrodes are kept at ambient temperature

Zener I vs. V Characteristics



V_{BR} : Voltage at I_{ZK}
I_{ZK} : Test current for voltage V_{BR}
Z_{ZK} : Dynamic impedance at I_{ZK}
I_{ZT} : Test current for voltage V_Z
V_Z : Voltage at current I_{ZT}
Z_{ZT} : Dynamic impedance at I_{ZT}
I_{ZM} : Maximum steady state current
V_{ZM} : Voltage at I_{ZM}

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Electrical Characteristics

Ta = 25°C unless otherwise noted

Part Number	Device Marking	V_Z @ I_{ZT} (Volt)			I_{ZT}(mA)	Z_{ZT} @ I_{ZT}(Ω) Max	I_{ZK}(mA)	Z_{ZK} @ I_{ZK}(Ω) Max	I_R @ V_R(μA) Max	V_R(V)
		Min	Nom	Max						
AZ23C2V7	KD1	2.5	2.7	2.9	5	83	1	500	0.1	-
AZ23C3V0	KD2	2.8	3.0	3.2	5	95	1	500	0.1	-
AZ23C3V3	KD3	3.1	3.3	3.5	5	95	1	500	0.1	-
AZ23C3V6	KD4	3.4	3.6	3.8	5	95	1	500	0.1	-
AZ23C3V9	KD5	3.7	3.9	4.1	5	95	1	500	0.1	-
AZ23C4V3	KD6	4.0	4.3	4.6	5	95	1	500	0.1	-
AZ23C4V7	KD7	4.4	4.7	5.0	5	78	1	500	0.1	-
AZ23C5V1	KD8	4.8	5.1	5.4	5	60	1	480	0.1	0.8
AZ23C5V6	KD9	5.2	5.6	6.0	5	40	1	400	0.1	1.0
AZ23C6V2	KDA	5.8	6.2	6.6	5	10	1	200	0.1	2.0
AZ23C6V8	KDB	6.4	6.8	7.2	5	8	1	150	0.1	3.0
AZ23C7V5	KDC	7.0	7.5	7.9	5	7	1	50	0.1	5.0
AZ23C8V2	KDD	7.7	8.2	8.7	5	7	1	50	0.1	6.0
AZ23C9V1	KDE	8.5	9.1	9.6	5	10	1	50	0.1	7.0
AZ23C10	KDF	9.4	10	10.6	5	15	1	70	0.1	7.5
AZ23C11	KDG	10.4	11	11.6	5	20	1	70	0.1	8.5
AZ23C12	KDH	11.4	12	12.7	5	20	1	90	0.1	9.0
AZ23C13	KDI	12.4	13	14.1	5	25	1	110	0.1	10.0
AZ23C15	KDJ	13.8	15	15.6	5	30	1	110	0.1	11.0
AZ23C16	KDK	15.3	16	17.1	5	40	1	170	0.1	12.0
AZ23C18	KDL	16.8	18	19.1	5	50	1	170	0.1	14.0
AZ23C20	KDM	18.8	20	21.2	5	50	1	220	0.1	15.0
AZ23C22	KDN	20.8	22	23.3	5	55	1	220	0.1	17.0
AZ23C24	KDO	22.8	24	25.6	5	80	1	220	0.1	18.0
AZ23C27	KDP	25.1	27	28.9	5	80	1	250	0.1	20.0
AZ23C30	KDQ	28	30	32	5	80	1	250	0.1	22.5
AZ23C33	KDR	31	33	35	5	80	1	250	0.1	25.0
AZ23C36	KDS	34	36	38	5	90	1	250	0.1	27.0
AZ23C39	KDT	37	39	41	5	90	1	300	0.1	29.0
AZ23C43	KDU	40	43	46	5	100	1	700	0.1	32.0
AZ23C47	KDV	44	47	50	5	100	1	750	0.1	35.0
AZ23C51	KDW	48	51	54	5	100	1	750	0.1	38.0

Notes:

1. The Zener Voltage (**V_Z**) is tested under pulse condition of 5ms.
2. The device numbers listed have a standard tolerance on the nominal zener voltage of **≦±5%**.
3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and

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Rating and Characteristic

FIG 1 Typical Forward Characteristics

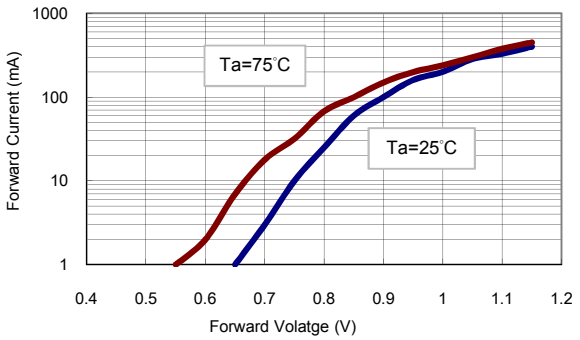


FIG 2 Zener Breakdown Characteristics

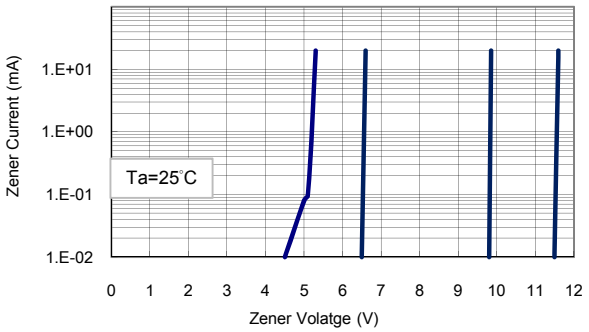


FIG 3 Zener Breakdown Characteristics

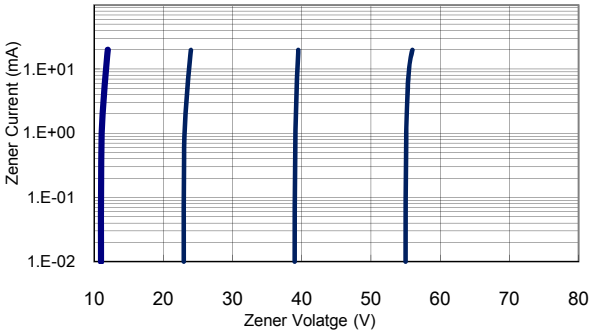
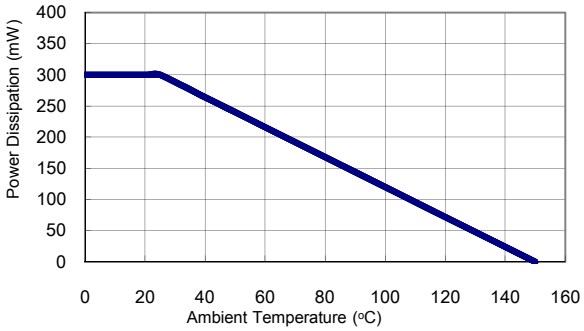
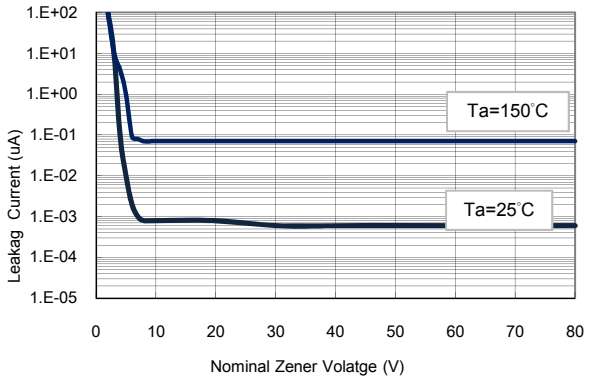


FIG 4 Admissible Power Dissipation Curve

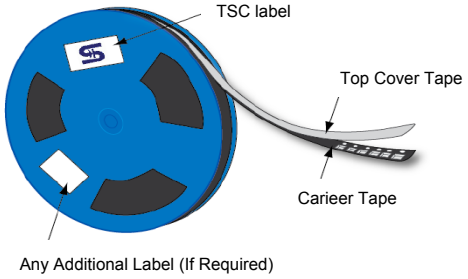


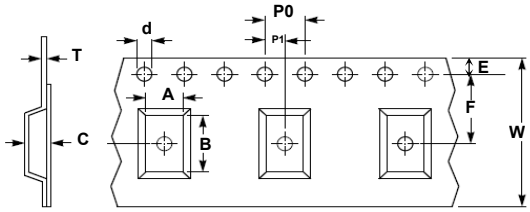
Zener Volatge (V)

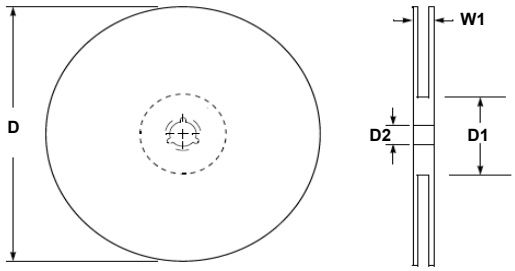
FIG 5 Typical Leadkage Current



Tape & Reel specification







Item	Symbol	Dimension(mm)
Carrier width	A	3.15 ±0.10
Carrier length	B	2.77 ±0.10
Carrier depth	C	1.22 ±0.10
Sprocket hole	d	1.50 ± 0.10
Reel outside diameter	D	178 ± 1
Reel inner diameter	D1	55 Min
Feed hole width	D2	13.0 ± 0.20
Sprocke hole position	E	1.75 ±0.10
Punch hole position	F	3.50 ±0.05
Sprocke hole pitch	P0	4.00 ±0.10
Embossment center	P1	2.00 ±0.05
Overall tape thickness	T	0.229 ±0.013
Tape width	W	8.10 ±0.20
Reel width	W1	12.30 ±0.20