Small Signal Product

500mW , 2% Tolerance SMD Zener Diode

FEATURES

- Wide zener voltage range selection: 2.4V to 75V
- VZ Tolerance Selection of ±2%
- Moisture sensitivity level 1
- Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- Pb free and RoHS compliant
- All external surfaces are corrosion resistant and leads are readily solderable

Pb-Free

QUADRO Mini-MELF (LS34)

Hermetically Sealed Glass

RoHS COMPLIANT

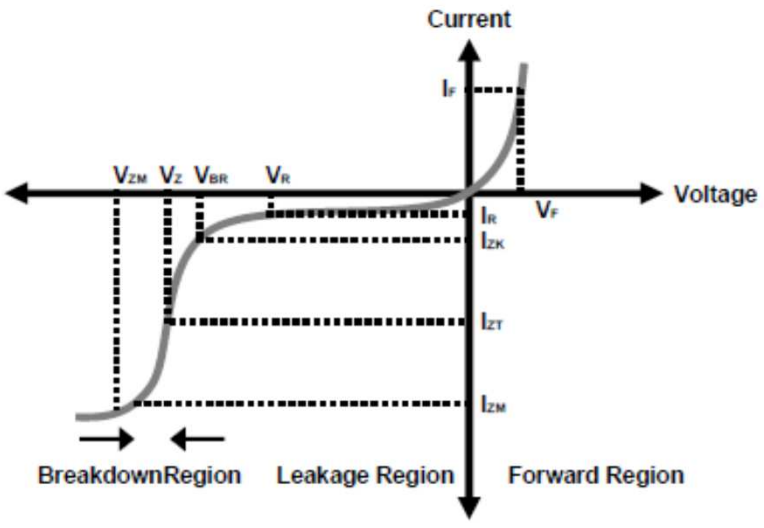
MECHANICAL DATA

- Case: QUADRO Mini-MELF Package (JEDEC DO-213)
- High temperature soldering guaranteed: 270°C/10s
- Polarity: Indicated by cathode band
- Weight: 29 ± 2.5mg

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)				
PARAMETER		**SYMBOL**	**VALUE**	**UNIT**
Power Dissipation		P_D	500	mW
Forward Voltage	I_F = 10 mA	V_F	1	V
Thermal Resistance (Junction to Ambient)	(Note 1)	$R_{\theta JA}$	500	°C/W
Junction and Storage Temperature Range		T_J, T_{STG}	- 65 to + 175	°C

Note1: 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
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

(Ratings at T_A=25°C ambient temperature unless otherwise specified)

V_F Forward Voltage = 1.0V Maximum @ I_F = 10 mA for all part numbers

Part Number	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						
BZT55B2V4	2.35	2.4	2.45	5	85	1	600	50	1
BZT55B2V7	2.65	2.7	2.75	5	85	1	600	10	1
BZT55B3V0	2.94	3.0	3.06	5	85	1	600	4	1
BZT55B3V3	3.23	3.3	3.37	5	85	1	600	2	1
BZT55B3V6	3.53	3.6	3.67	5	85	1	600	2	1
BZT55B3V9	3.82	3.9	3.98	5	85	1	600	2	1
BZT55B4V3	4.21	4.3	4.39	5	75	1	600	1	1
BZT55B4V7	4.61	4.7	4.79	5	60	1	600	0.5	1
BZT55B5V1	5.00	5.1	5.20	5	35	1	550	0.1	1
BZT55B5V6	5..49	5.6	5.71	5	25	1	450	0.1	1
BZT55B6V2	6.08	6.2	6.32	5	10	1	200	0.1	2
BZT55B6V8	6.66	6.8	6.94	5	8	1	150	0.1	3
BZT55B7V5	7.35	7.5	7.65	5	7	1	50	0.1	5
BZT55B8V2	8.04	8.2	8.36	5	7	1	50	0.1	6.2
BZT55B9V1	8.92	9.1	9.28	5	10	1	50	0.1	6.8
BZT55B10	9.80	10.0	10.20	5	15	1	70	0.1	7.5
BZT55B11	10.78	11.0	11.22	5	20	1	70	0.1	8.2
BZT55B12	11.76	12.0	12.24	5	20	1	90	0.1	9.1
BZT55B13	12.74	13.0	13.26	5	26	1	110	0.1	10
BZT55B15	14.70	15.0	15.30	5	30	1	110	0.1	11
BZT55B16	15.68	16.0	16.32	5	40	1	170	0.1	12
BZT55B18	17.64	18.0	18.36	5	50	1	170	0.1	13
BZT55B20	19.60	20.0	20.40	5	55	1	220	0.1	15
BZT55B22	21.56	22.0	22.44	5	55	1	220	0.1	16
BZT55B24	23.52	24.0	24.48	5	80	1	220	0.1	18
BZT55B27	26.46	27.0	27.54	5	80	1	220	0.1	20
BZT55B30	29.40	30.0	30.60	5	80	1	220	0.1	22
BZT55B33	32.34	33.0	33.66	5	80	1	220	0.1	24
BZT55B36	35.28	36.0	36.72	5	80	1	220	0.1	27
BZT55B39	38.22	39.0	39.78	2.5	90	0.5	500	0.1	28
BZT55B43	42.14	43.0	43.86	2.5	90	0.5	600	0.1	32
BZT55B47	46.06	47.0	47.94	2.5	110	0.5	700	0.1	35
BZT55B51	49.98	51.0	52.02	2.5	125	0.5	700	0.1	38
BZT55B56	54.88	56.0	57.12	2.5	135	0.5	1000	0.1	42
BZT55B62	60.76	62.0	63.24	2.5	150	0.5	1000	0.1	47
BZT55B68	66.64	68.0	69.36	2.5	160	0.5	1000	0.1	51
BZT55B75	73.50	75.0	76.50	2.5	170	0.5	1000	0.1	56

Notes： 1. The Zener Voltage (V_Z) is tested under pulse condition of 10ms.

2. The device numbers listed have a standard tolerance on the nomial zener voltage of ±2%

3. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest **Taiwan Semiconductor** representative.

4. The Zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an RMS value equal to 10% of the dc zener current(I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

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RATINGS AND CHARACTERISTICS CURVES (BZT55B2V4 ~ BZT55B75)

(TA=25℃ unless otherwise noted)

Fig. 1 Typical Forward Characteristics

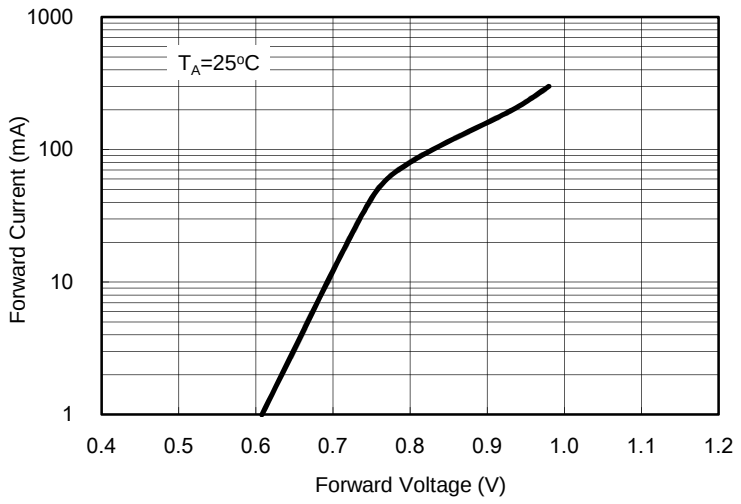

Fig. 2 Zener Breakdown Characteristics

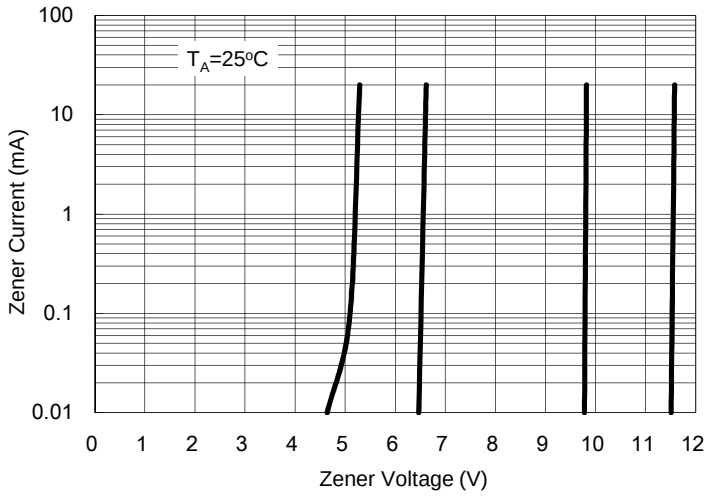

Fig. 3 Zener Breakdown Characteristics

Fig. 4 Admissible Power Dissipation curve

Fig. 5 Typical Capacitance

Fig. 6 Effect of Zener Voltage on Impedence

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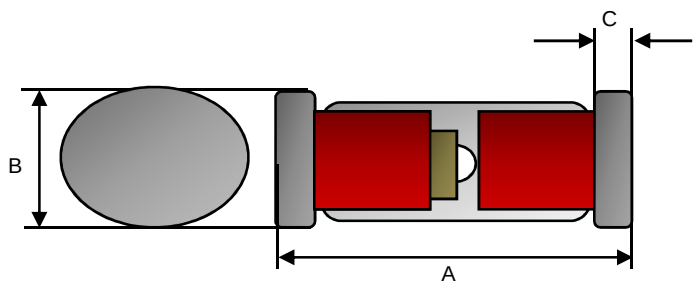
ORDERING INFORMATION					
PART NO.	**MANUFACTURE CODE**	**PACKING CODE**	**GREEN COMPOUND**	**PACKAGE**	**PACKING**
BZT55Bxxx (Note1)	(Note 2)	L0	G	Quadro Mini-MELF (Glass Seal)	10K / 13" Reel
		L1	G	Quadro Mini-MELF (Glass Seal)	2.5K / 7" Reel

Note 1: "xxx" is Device Code from "2V4" thru "75".

Note 2: Manufacture special control, if empty means no special control requirement.

EXAMPLE					
PREFERRED P/N	**PART NO.**	**MANUFACTURE CODE**	**PACKING CODE**	**GREEN COMPOUND CODE**	**DESCRIPTION**
BZT55B2V4 L0G	BZT55B2V4		L0	G	Green compound
BZT55B2V4-L0 L0G	BZT55B2V4	L0	L0	G	Green compound
BZT55B2V4-B0 L0G	BZT55B2V4	B0	L0	G	Green compound

PACKAGE OUTLINE DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	3.30	3.70	0.130	0.146
B	1.40	1.60	0.055	0.063
C	0.20	0.50	0.008	0.020

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