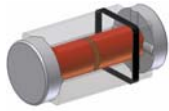


**Small Signal Diode**

**Features**

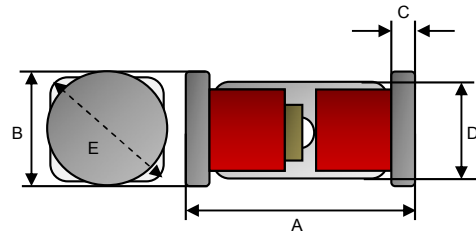
- ✧ Wide zener voltage range selection : 2.4V to 75V
- ✧  $V_z$  Tolerance Selection of  $\pm 5\%$
- ✧ Moisture sensitivity level 1
- ✧ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧ Pb free version and RoHS compliant
- ✧ All External Surfaces are Corrosion Resistant and Leads are Readily Solderable

**Mechanical Data**

- ✧ Case : QUADRO Mini-MELF Package (JEDEC DO-213)
- ✧ High temperature soldering guaranteed :  $270^\circ\text{C}/10\text{s}$
- ✧ Polarity : Indicated by cathode band
- ✧ Weight :  $29 \pm 2.5 \text{ mg}$

**Ordering Information**

Part No.	Package	Packing
BZT55Cxx L0	QMMELF	10Kpcs / 13" Reel
BZT55Cxx L1	QMMELF	2.5Kpcs / 7" Reel

**QUADRO Mini-MELF (LS34)**  
**HERMETICALLY SEALED GLASS**


Dimensions	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	0.25	0.40	0.010	0.016
D	1.25	1.40	0.049	0.055
E	1.80		0.071	

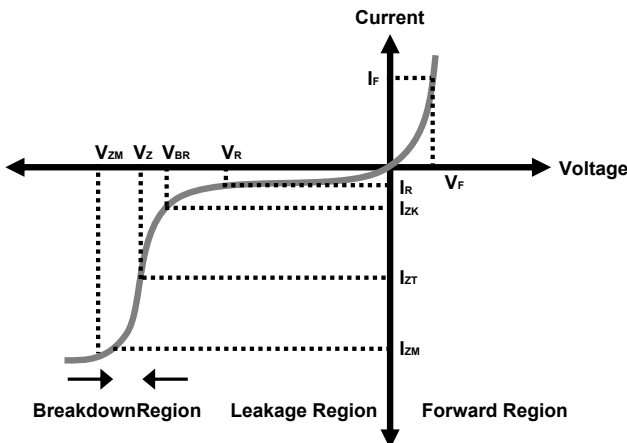
**Maximum Ratings and Electrical Characteristics**

Rating at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.

**Maximum Ratings**

Type Number	Symbol	Value	Units
Power Dissipation	$P_D$	500	mW
Forward Voltage	$V_F$	1.0	V
Thermal Resistance (Junction to Ambient)	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{STG}$	-65 to + 175	$^\circ\text{C}$

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  $I_{ZM}$

**Small Signal Diode**

**Electrical Characteristics**

Ta = 25°C unless otherwise noted

V<sub>F</sub> Forward Voltage = 1.0V Maximum @ I<sub>F</sub> = 10 mA for all part numbers

Part Number	V <sub>Z</sub> @ I <sub>ZT</sub> (Volt)			I <sub>ZT</sub> (mA)	Z <sub>ZT</sub> @ I <sub>ZT</sub> (Ω) Max	I <sub>ZK</sub> (mA)	Z <sub>ZK</sub> @ I <sub>ZK</sub> (Ω) Max	I <sub>R</sub> @ V <sub>R</sub> (μA) Max	V <sub>R</sub> (V)
	Nom	Min	Max						
BZT55C2V4	2.4	2.28	2.52	5	85	1	600	50	1
BZT55C2V7	2.7	2.57	2.84	5	85	1	600	10	1
BZT55C3V0	3.0	2.85	3.15	5	85	1	600	4	1
BZT55C3V3	3.3	3.14	3.47	5	85	1	600	2	1
BZT55C3V6	3.6	3.42	3.78	5	85	1	600	2	1
BZT55C3V9	3.9	3.71	4.10	5	85	1	600	2	1
BZT55C4V3	4.3	4.09	4.52	5	75	1	600	1	1
BZT55C4V7	4.7	4.47	4.94	5	60	1	600	0.5	1
BZT55C5V1	5.1	4.85	5.36	5	35	1	550	0.1	1
BZT55C5V6	5.6	5.32	5.88	5	25	1	450	0.1	1
BZT55C6V2	6.2	5.89	6.51	5	10	1	200	0.1	2
BZT55C6V8	6.8	6.46	7.14	5	8	1	150	0.1	3
BZT55C7V5	7.5	7.13	7.88	5	7	1	50	0.1	5
BZT55C8V2	8.2	7.79	8.61	5	7	1	50	0.1	6.2
BZT55C9V1	9.1	8.65	9.56	5	10	1	50	0.1	6.8
BZT55C10	10	9.50	10.50	5	15	1	70	0.1	7.5
BZT55C11	11	10.45	11.55	5	20	1	70	0.1	8.2
BZT55C12	12	11.40	12.60	5	20	1	90	0.1	9.1
BZT55C13	13	12.35	13.65	5	26	1	110	0.1	10
BZT55C15	15	14.25	15.75	5	30	1	110	0.1	11
BZT55C16	16	15.20	16.80	5	40	1	170	0.1	12
BZT55C18	18	17.10	18.90	5	50	1	170	0.1	13
BZT55C20	20	19.00	21.00	5	55	1	220	0.1	15
BZT55C22	22	20.90	23.10	5	55	1	220	0.1	16
BZT55C24	24	22.80	25.20	5	80	1	220	0.1	18
BZT55C27	27	25.65	28.35	5	80	1	220	0.1	20
BZT55C30	30	28.50	31.50	5	80	1	220	0.1	22
BZT55C33	33	31.35	34.65	5	80	1	220	0.1	24
BZT55C36	36	34.20	37.80	5	80	1	220	0.1	27
BZT55C39	39	37.05	40.95	2.5	90	0.5	500	0.1	28
BZT55C43	43	40.85	45.15	2.5	90	0.5	600	0.1	32
BZT55C47	47	44.65	49.35	2.5	110	0.5	700	0.1	35
BZT55C51	51	48.45	53.55	2.5	125	0.5	700	0.1	38
BZT55C56	56	53.20	58.80	2.5	135	0.5	1000	0.1	42
BZT55C62	62	58.90	65.10	2.5	150	0.5	1000	0.1	47
BZT55C68	68	64.60	71.40	2.5	160	0.5	1000	0.1	51
BZT55C75	75	71.25	78.75	2.5	170	0.5	1000	0.1	56

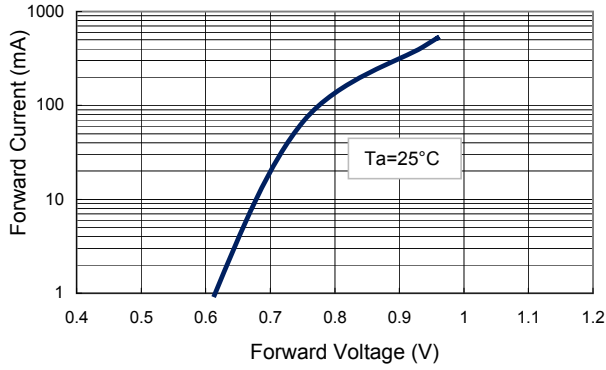
**Notes:**

1. The Zener Voltage (V<sub>Z</sub>) is tested under pulse condition of 10ms.
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 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<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed to I<sub>ZT</sub> or I<sub>ZK</sub>.

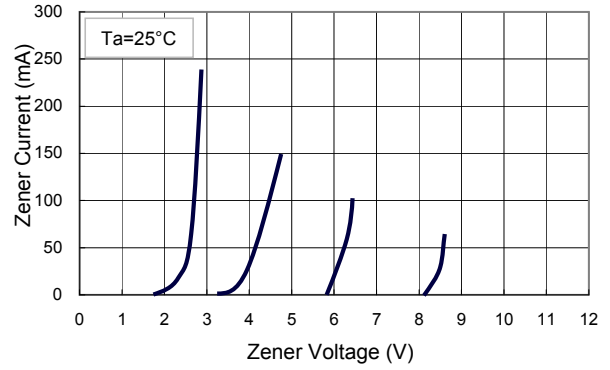
**Small Signal Diode**

**Rating and Sharacteristic Curves**

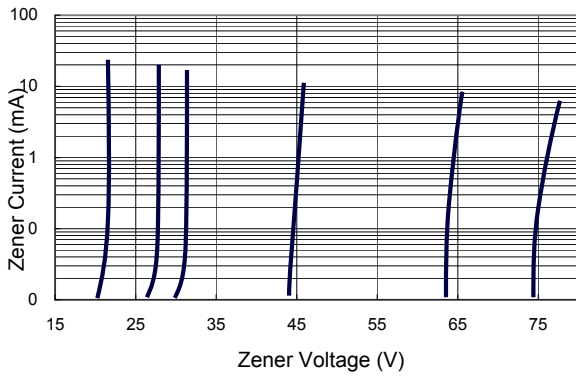
**FIG 1 Typical Forward Characteristics**



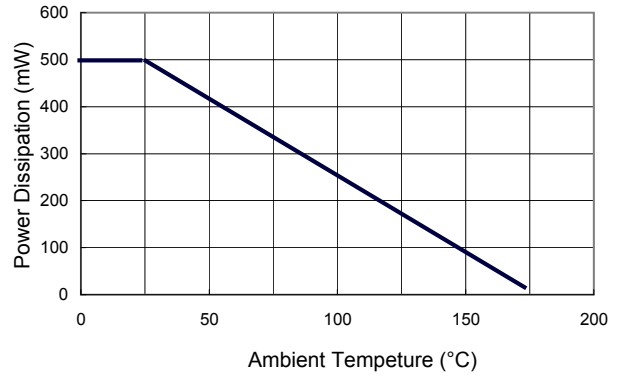
**FIG 2 Zener Breakdown Characteristics**



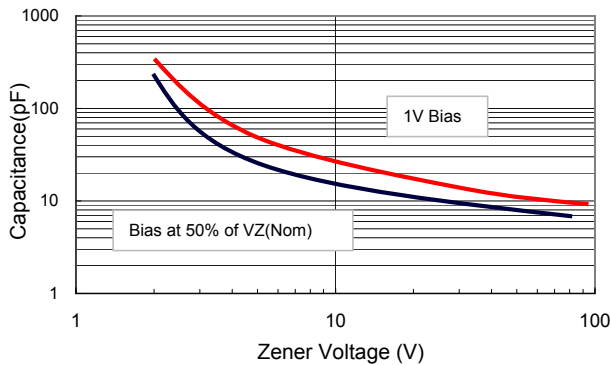
**FIG 3 Zener Breakdown Characteristics**



**FIG 4 Admissible Power Dissipation Curve**



**FIG 5 Typical Capacitance**



**FIG 6 Effect of Zener Voltage on Impedance**

