

500mW, 2.4V - 75V Surface Mount Zener Diode

FEATURES

- Wide Zener voltage range selection: 2.4V to 75V
- V_Z tolerance selection of $\pm 5\%$
- Hermetically sealed glass
- RoHS Compliant

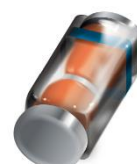
APPLICATIONS

- Low voltage stabilizers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: QMMELF
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 30.80mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_Z	2.4 - 75	V
P_D	500	mW
V_F at $I_F = 10\text{mA}$	1	V
$T_{J\text{ MAX}}$	175	$^{\circ}\text{C}$
Package	QMMELF	
Configuration	Single die	


QMMELF


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Forward voltage @ $I_F = 10\text{mA}$	V_F	1	V
Power dissipation	P_D	500	mW
Junction temperature range	T_J	-65 to +175	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 to +175	$^{\circ}\text{C}$

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	500	$^{\circ}\text{C}/\text{W}$

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)									
PART NUMBER	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
	$V_Z @ I_{ZT}$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$	
	V			mA	Ω	Ω	mA	μA	V
	Min	Nom	Max		Max	Max		Max	
BZT55C2V4	2.28	2.4	2.56	5	85	600	1	50	1
BZT55C2V7	2.51	2.7	2.89	5	85	600	1	10	1
BZT55C3V0	2.8	3.0	3.2	5	85	600	1	4	1
BZT55C3V3	3.1	3.3	3.5	5	85	600	1	2	1
BZT55C3V6	3.4	3.6	3.8	5	85	600	1	2	1
BZT55C3V9	3.7	3.9	4.1	5	85	600	1	2	1
BZT55C4V3	4.0	4.3	4.6	5	75	600	1	1	1
BZT55C4V7	4.4	4.7	5.0	5	60	600	1	0.5	1
BZT55C5V1	4.8	5.1	5.4	5	35	550	1	0.1	1
BZT55C5V6	5.2	5.6	6.0	5	25	450	1	0.1	1
BZT55C6V2	5.8	6.2	6.6	5	10	200	1	0.1	2
BZT55C6V8	6.4	6.8	7.2	5	8	150	1	0.1	3
BZT55C7V5	7.0	7.5	7.9	5	7	50	1	0.1	5
BZT55C8V2	7.7	8.2	8.7	5	7	50	1	0.1	6.2
BZT55C9V1	8.5	9.1	9.6	5	10	50	1	0.1	6.8
BZT55C10	9.4	10	10.6	5	15	70	1	0.1	7.5
BZT55C11	10.4	11	11.6	5	20	70	1	0.1	8.2
BZT55C12	11.4	12	12.7	5	20	90	1	0.1	9.1
BZT55C13	12.4	13	14.1	5	26	110	1	0.1	10
BZT55C15	13.8	15	15.6	5	30	110	1	0.1	11
BZT55C16	15.3	16	17.1	5	40	170	1	0.1	12
BZT55C18	16.8	18	19.1	5	50	170	1	0.1	13
BZT55C20	18.8	20	21.1	5	55	220	1	0.1	15
BZT55C22	20.8	22	23.3	5	55	220	1	0.1	16
BZT55C24	22.8	24	25.6	5	80	220	1	0.1	18
BZT55C27	25.1	27	28.9	5	80	220	1	0.1	20
BZT55C30	28	30	32	5	80	220	1	0.1	22
BZT55C33	31	33	35	5	80	220	1	0.1	24
BZT55C36	34	36	38	5	80	220	1	0.1	27
BZT55C39	37	39	41	2.5	90	500	0.5	0.1	28
BZT55C43	40	43	46	2.5	90	600	0.5	0.1	32
BZT55C47	44	47	50	2.5	110	700	0.5	0.1	35
BZT55C51	48	51	54	2.5	125	700	0.5	0.1	38
BZT55C56	52	56	60	2.5	135	1,000	0.5	0.1	42
BZT55C62	58	62	66	2.5	150	1,000	0.5	0.1	47
BZT55C68	64	68	72	2.5	160	1,000	0.5	0.1	51
BZT55C75	70	75	79	2.5	170	1,000	0.5	0.1	56

Notes:

1. The Zener voltage (V_Z) is tested under pulse condition of 30ms
2. The device numbers listed have a standard tolerance on the nominal Zener voltage of $\pm 5\%$
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_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾⁽²⁾	PACKAGE	PACKING
BZT55Cx L0	QMMELF	10,000 / 13" Tape & Reel
BZT55Cx L0G	QMMELF	10,000 / 13" Tape & Reel

Notes:

1. "x" defines voltage from 2.4V (BZT55C2V4) to 75V (BZT55C75)
2. Above ordering codes L0/L0G refer to physically identical parts without any differences

CHARACTERISTICS CURVES

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig.1 Typical Forward Characteristics

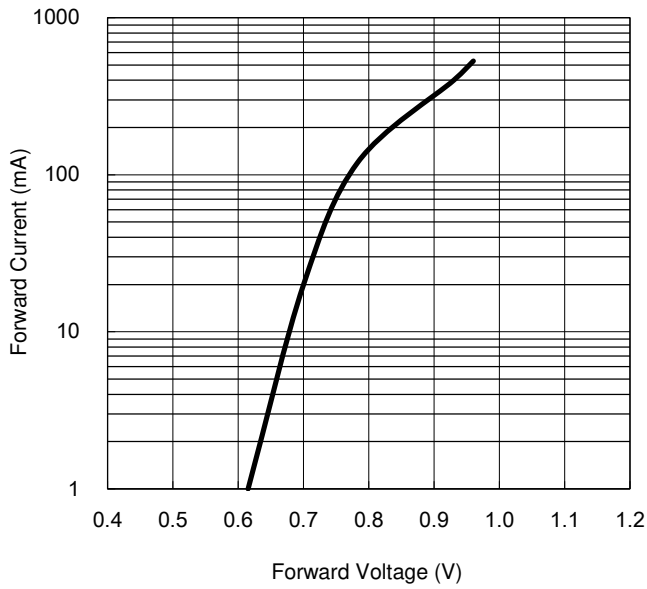


Fig.2 Admissible Power Dissipation Curve

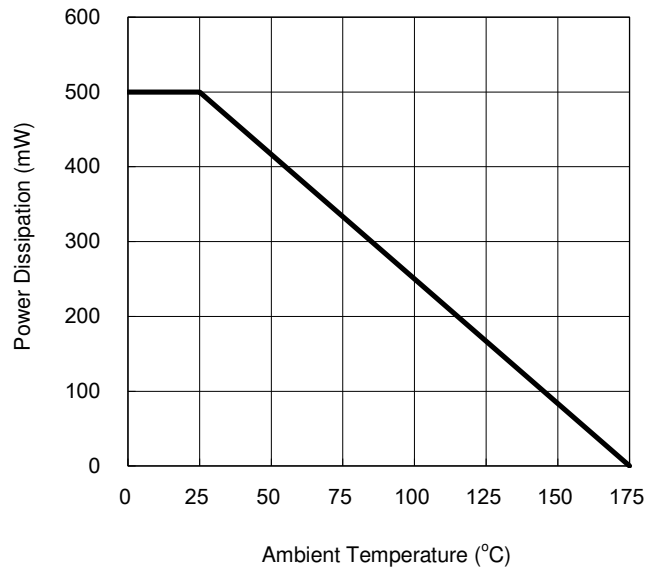
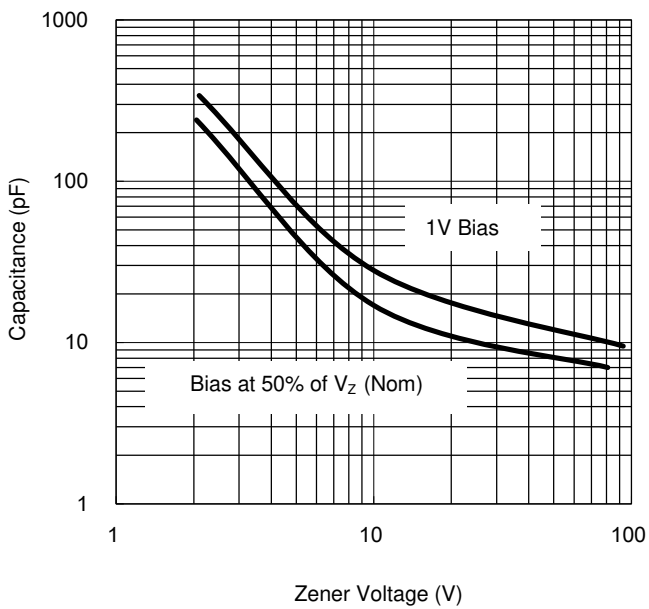
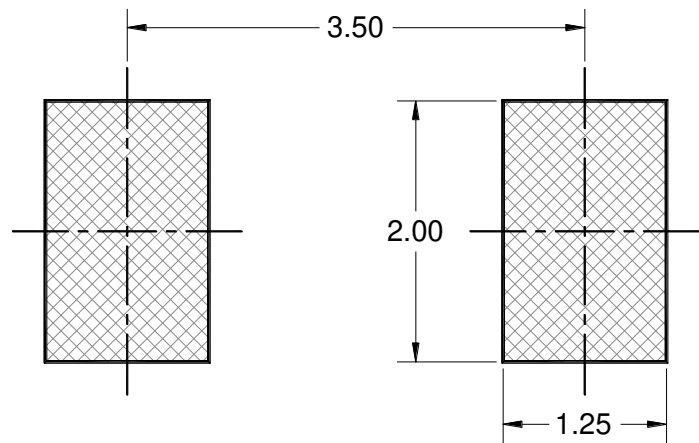
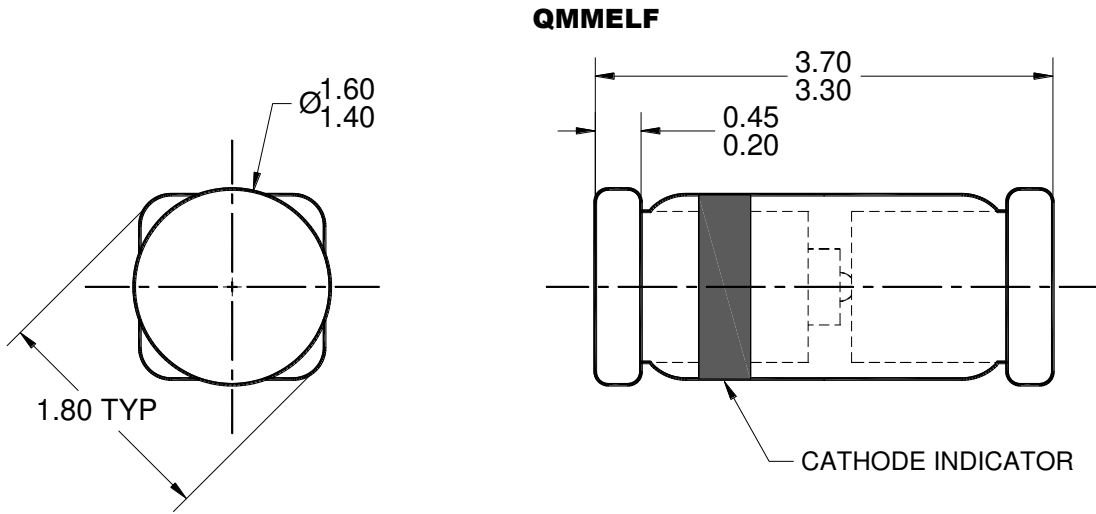


Fig.3 Typical Capacitance



PACKAGE OUTLINE DIMENSIONS



SUGGESTED PAD LAYOUT

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-213, VARIATION AA, ISSUE D.
4. DWG NO. REF: HQ2SD07-QMMELF-061 REV A.

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