TAK CHEONG ®

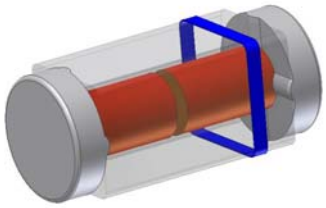
PRELIMINARY DATASHEET

500 mW QUADRO Mini-MELF
Hermetically Sealed Glass Zener Voltage Regulators

Absolute Maximum Ratings
T_A = 25°C unless otherwise noted

Parameter	Value	Units
Power Dissipation	500	mW
Storage Temperature Range	-65 to +175	°C
Operating Junction Temperature	+175	°C

These ratings are limiting values above which the serviceability of the diode may be impaired.



Cathode Band Color: Blue

Specification Features:

- Zener Voltage Range 2.2 to 39 Volts
- Quadro mini-MELF Package
- Surface Device Type Mounting
- Hermetically Sealed Glass
- Compression Bonded Construction
- All External Surfaces Are Corrosion Resistant And Termianls are readily solderable
- RoHS Compliant
- Matte Tin (Sn) Terminal Finish
- Color Band Indicates Negative Polarity

ELECTRICAL SYMBOL

Electrical Characteristics
T_A = 25°C unless otherwise noted

Device Type	VZ Tolerance	VZ@IZT Min	VZ@IZT Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R@V_R (uA) Max	V_R (V)
VLZ2V2	A	2.12	2.30	20	35	400	1	55	0.7
	B	2.22	2.41						
VLZ2V4	A	2.33	2.52	20	35	400	1	84	1
	B	2.43	2.63						
VLZ2V7	A	2.54	2.75	20	35	450	1	70	1
	B	2.69	2.91						
VLZ3V0	A	2.85	3.07	20	35	450	1	35	1
	B	3.01	3.22						
VLZ3V3	A	3.16	3.38	20	35	450	1	14	1
	B	3.32	3.53						
VLZ3V6	A	3.46	3.70	20	48	850	1	2.8	1
	B	3.60	3.85						
VLZ3V9	A	3.74	4.01	20	40	850	1	1.4	1
	B	3.89	4.16						
VLZ4V3	A	4.04	4.29	20	32	850	1	0.47	1
	B	4.17	4.43						
	C	4.30	4.57						
VLZ4V7	A	4.44	4.68	20	21	770	1	0.19	1
	B	4.55	4.80						
	C	4.68	4.93						
VLZ5V1	A	4.81	5.07	20	17	685	1	0.19	1.5
	B	4.94	5.20						
	C	5.09	5.37						

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Device Type	T Tolerance	V_Z@Izt Min	V_Z@Izt Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R@V_R (uA) Max	V_R (V)
VLZ5V6	A	5.28	5.55	20	10.5	425	1	0.75	2.5
	B	5.45	5.73						
	C	5.61	5.91						
VLZ6V2	A	5.78	6.09	20	8.5	255	1	3.30	3.0
	B	5.96	6.27						
	C	6.12	6.44						
VLZ6V8	A	6.29	6.63	20	6.6	123	0.5	1.10	3.5
	B	6.49	6.83						
	C	6.66	7.01						
VLZ7V5	A	6.85	7.22	20	6.6	95	0.5	0.30	4.0
	B	7.07	7.45						
	C	7.29	7.67						
VLZ8V2	A	7.53	7.92	20	6.6	95	0.5	0.30	5.0
	B	7.78	8.19						
	C	8.03	8.45						
VLZ9V1	A	8.29	8.73	20	6.6	95	0.5	0.30	6.0
	B	8.57	9.01						
	C	8.83	9.30						
VLZ10V	A	9.12	9.59	20	6.6	95	0.5	0.11	7.0
	B	9.41	9.90						
	C	9.70	10.2						
VLZ11V	A	10.18	10.71	10	8.5	95	0.5	0.133	8.0
	B	10.50	11.05						
	C	10.82	11.38						
VLZ12V	A	11.13	11.71	10	9.5	95	0.5	0.133	9.0
	B	11.44	12.03						
	C	11.74	12.35						
VLZ13V	A	12.11	12.75	10	11.4	95	0.5	0.133	10
	B	12.55	13.21						
	C	12.99	13.66						
VLZ15V	A	13.44	14.13	10	13.3	95	0.5	0.133	11
	B	13.89	14.62						
	C	14.35	15.09						
VLZ16V	A	14.80	15.57	10	15.2	132	0.5	0.133	12
	B	15.25	16.04						
	C	15.69	16.51						
VLZ18V	A	16.22	17.06	10	19.4	123	0.5	0.133	13
	B	16.82	17.70						
	C	17.42	18.33						
VLZ20V	A	18.02	18.96	10	23.5	170	0.5	0.133	15
	B	18.63	19.59						
	C	19.23	20.22						
	D	19.72	20.72						
VLZ22V	A	20.15	21.2	5	25.6	170	0.5	0.133	17
	B	20.64	21.71						
	C	21.08	22.17						
	D	21.52	22.63						
VLZ24V	A	22.05	23.18	5	29.0	170	0.5	0.133	19
	B	22.61	23.77						
	C	23.12	24.31						
	D	23.63	24.85						
VLZ27V	A	24.26	25.52	5	38.0	210	0.5	0.133	21
	B	24.97	26.26						
	C	25.63	26.95						
	D	26.29	27.64						
VLZ30V	A	26.99	28.39	5	46.0	210	0.5	0.133	23
	B	27.70	29.13						
	C	28.36	29.82						
	D	29.02	30.51						

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Device Type	T Tolerance	V_Z@Izt Min	V_Z@Izt Max	Izt (mA)	Zzt@Izt (Ohms) Max	Zzk@Izk (Ohms) Max	Izk (mA)	I_R@V_R (uA) Max	V_R (V)
VLZ33V	A	29.68	31.22	5	55.0	210	0.5	0.133	25
	B	30.32	31.88						
	C	30.90	32.50						
	D	31.49	33.11						
VLZ36V	A	32.14	33.79	5	63.0	210	0.5	0.133	27
	B	32.79	34.49						
	C	33.40	35.13						
	D	34.01	35.77						
VLZ39V	A	34.68	36.47	5	72.0	210	0.5	0.133	30
	B	35.36	37.19						
	C	36.00	37.85						
	D	36.63	38.52						

Notes:

1. TOLERANCE AND VOLTAGE DESIGNATION

The type numbers listed have zener voltage as shown.

2. SPECIALS AVAILABLE INCLUDE

Nominal zener voltages between the voltages shown and tighter voltage, for detailed information on price, availability and delivery, contact you nearest Tak Cheong representative.

3. ZENER VOLTAGE (V_Z) MEASUREMENT

The zener voltage is measured under pulse conditions such that T_J is no more than 2℃ above T_A.

4. ZENER IMPEDANCE (Z_Z) DERIVATION

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}) is superimposed to I_{ZT} .

5. WHEN ORDERING, PLEASE SPECIFY TOLERANCE A, B. C OR D

Typical Characteristics

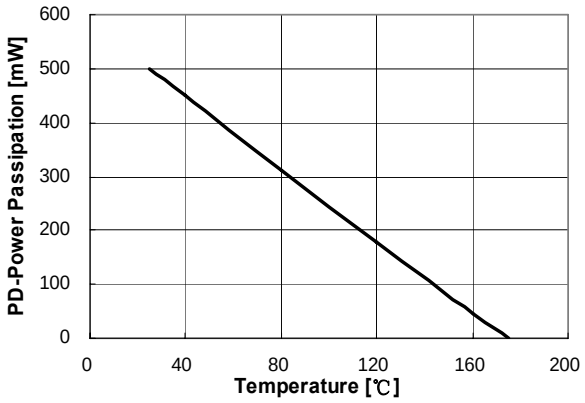


Figure 1. Power Dissipation vs Ambient Temperature
Valid provided leads at a distance of 0.8mm from case are kept at ambient temperature

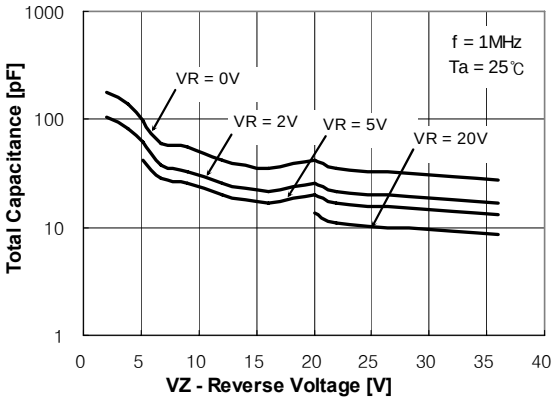


Figure 2. Total Capacitance

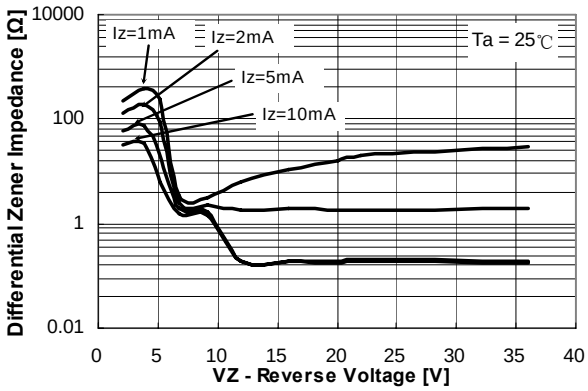


Figure 3. Differential Impedance vs. Zener Voltage

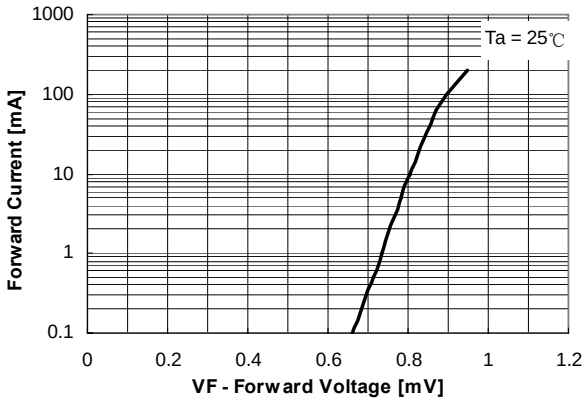


Figure 4. Forward Current vs. Forward Voltage

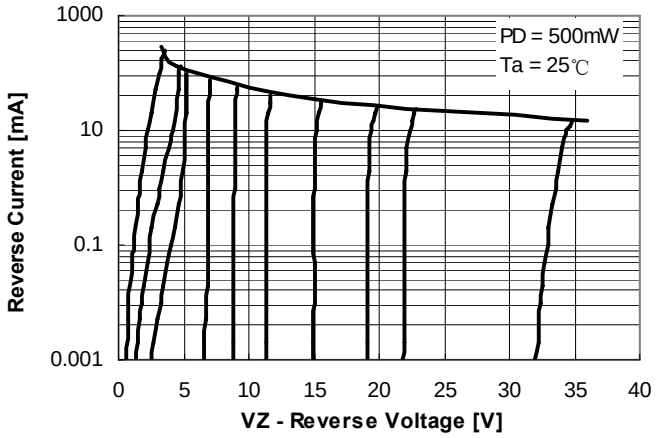
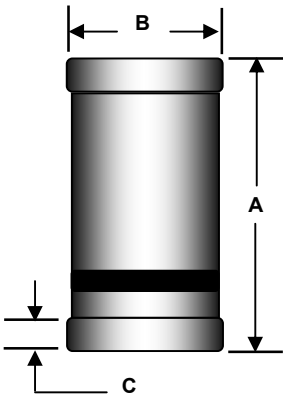
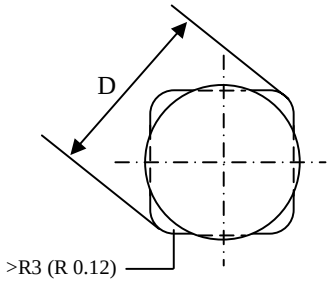


Figure 5. Reverse Current vs. Reverse Voltage

Package Outline

Case Outline





DIM	QUADRO (Mini-MELF)			
	Millimeters		Inches	
	Min	Max	Min	Max
A	3.30	3.70	0.130	0.146
B	1.40	1.60	0.055	0.063
C	0.35	0.45	0.014	0.018
D	Typical 1.8		Typical 0.071	

Notes:

1. JEDEC DO-213 AA
2. Polarity Denoted by a Band.

NOTICE

The information presented in this document is for reference only. Tak Cheong reserves the right to make changes without notice for the specification of the products displayed herein.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Tak Cheong Semiconductor Co., Ltd., or anyone on its behalf, assumes no responsibility or liability for any damagers resulting from such improper use of sale.

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