

SMD Zener Diode

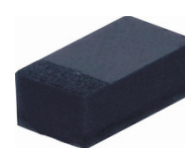


SMD Diodes Specialist

CZRER52C2 Thru CZRER52C39 (RoHS Device)

Voltage 2 to 39 Volts

Power 150 mWatts

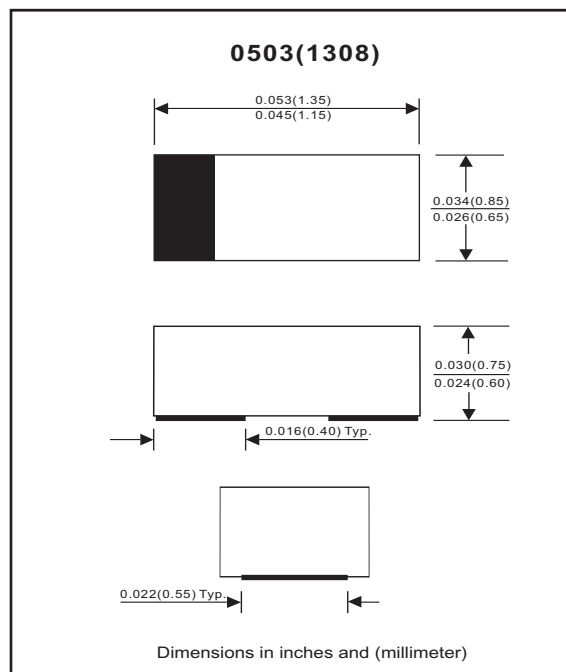


Features

- 150mW Power Dissipation.
- High Voltages from 2 ~ 39 V.
- Designed for mounting on small surface.
- Extremely thin/leadless package.
- Pb free product.

Mechanical data

- Case: 0503(1308)Standard package
Molded plastic.
- Terminals: Gold plated, solderable per
MIL-STD-750,method 2026.
- Polarity: Indicated by cathode band.
- Weight: 0.002 gram(approx.).



Maximum Rating AND Electrical Characteristics

Parameter	Symbol	Value	Unit
Maximum Forward Voltage Drop at $I_F = 10 \text{ mA}$	V_F	0.9	V
Maximum Power Dissipation at 25°C	P_D	150	mW
Forward current , surge peak 8.3 ms single half sine-wave superimposed on rate load(JEDEC method)	I_{FSM}	2.0	A
Peak ESD voltage capability (IEC 61000-4-2)	V_{PV}	8	kV
Operating Junction and Storage Temperature Range	T_J	-55 to +125	$^\circ\text{C}$

Electrical Characteristics (TA=25°C)

Part Number	Marking Code	Zener Voltage			Operating resistance		Rising operating Resistance		Reverse current	
		V _Z (V)			ZZT(Ohm)		ZZK(Ohm)		IR(μA)	
		Min	Max	I _Z (mA)	Max	I _Z (mA)	Max	I _Z (mA)	Max	V _R (V)
CZRE R52C2	Z0	1.90	2.10	5	100	5	600	1	100	1
CZRE R52C2V2	Z1	2.09	2.31	5	100	5	600	1	100	1
CZRE R52C2V4	Z2	2.28	2.52	5	85	5	600	1	100	1
CZRE R52C2V7	Z3	2.57	2.84	5	83	5	500	1	75	1
CZRE R52C3	Z4	2.85	3.15	5	95	5	500	1	50	1
CZRE R52C3V3	Z5	3.14	3.47	5	95	5	500	1	25	1
CZRE R52C3V6	Z6	3.42	3.78	5	95	5	500	1	15	1
CZRE R52C3V9	Z7	3.71	4.10	5	95	5	500	1	10	1
CZRE R52C4V3	Z8	4.09	4.52	5	95	5	500	1	5	1
CZRE R52C4V7	Z9	4.47	4.94	5	78	5	500	1	5	2
CZRE R52C5V1	ZA	4.85	5.36	5	60	5	480	1	0.1	0.8
CZRE R52C5V6	ZB	5.32	5.88	5	40	5	400	1	0.1	1
CZRE R52C6V2	ZC	5.89	6.51	5	10	5	200	1	0.1	2
CZRE R52C6V8	ZE	6.46	7.14	5	8	5	150	1	0.1	3
CZRE R52C7V5	ZF	7.13	7.88	5	7	5	50	1	0.1	5
CZRE R52C8V2	ZG	7.79	8.61	5	7	5	50	1	0.1	6
CZRE R52C9V1	ZH	8.65	9.56	5	10	5	50	1	0.1	7
CZRE R52C10	ZJ	9.50	10.50	5	15	5	70	1	0.1	7.5
CZRE R52C11	ZK	10.45	11.55	5	20	5	70	1	0.1	8.5
CZRE R52C12	ZM	11.40	12.60	5	20	5	90	1	0.1	9
CZRE R52C13	ZN	12.35	13.65	5	25	5	110	1	0.1	10
CZRE R52C15	ZP	14.25	15.75	5	30	5	110	1	0.1	11
CZRE R52C16	ZQ	15.20	16.80	5	40	5	170	1	0.1	12
CZRE R52C18	ZR	17.10	18.90	5	50	5	170	1	0.1	14
CZRE R52C20	ZS	19.00	21.00	5	50	5	220	1	0.1	15
CZRE R52C22	ZT	20.90	23.10	5	55	5	220	1	0.1	17
CZRE R52C24	ZU	22.80	25.20	5	80	5	220	1	0.1	18
CZRE R52C27	ZV	25.65	28.35	5	80	5	250	1	0.1	20
CZRE R52C30	ZW	28.50	31.50	5	80	5	250	1	0.1	23
CZRE R52C33	ZX	31.35	34.65	5	80	5	250	1	0.1	25
CZRE R52C36	ZY	34.20	37.80	5	90	5	250	1	0.1	27
CZRE R52C39	ZZ	37.05	40.95	5	90	5	300	1	0.1	29

RATING AND CHARACTERISTIC CURVES (CZRER52C2 Thru CZRER52C39)

Fig.1 TEMPERATURE COEFFICIENTS

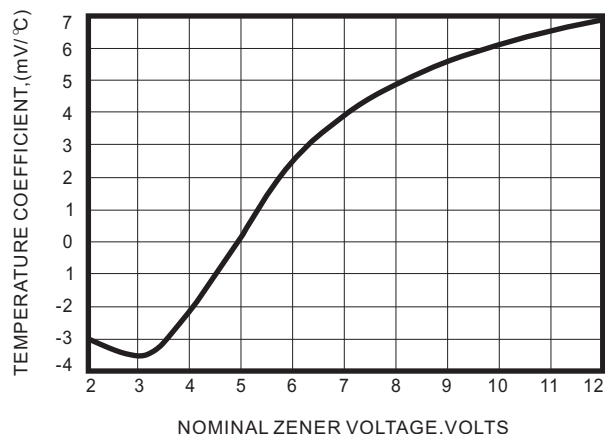


Fig.2 TEMPERATURE COEFFICIENTS

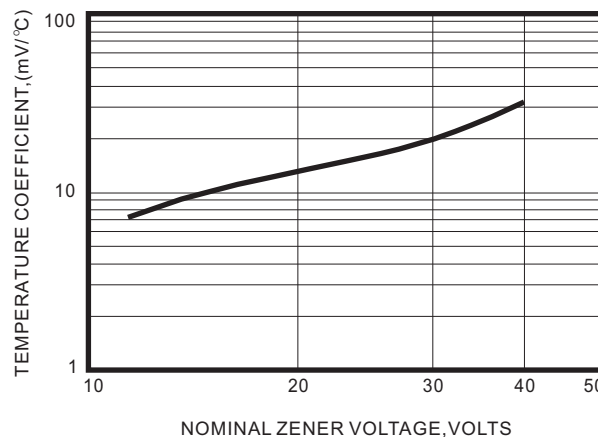


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

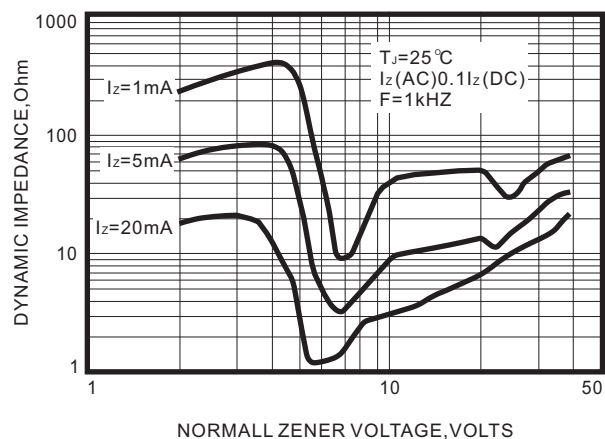


Fig.4 TYPICAL FORWARD VOLTAGE

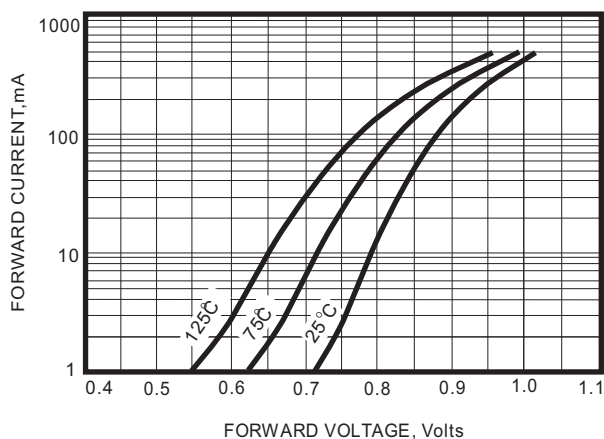


Fig.5 TYPICAL LEAKAGE CURRENT

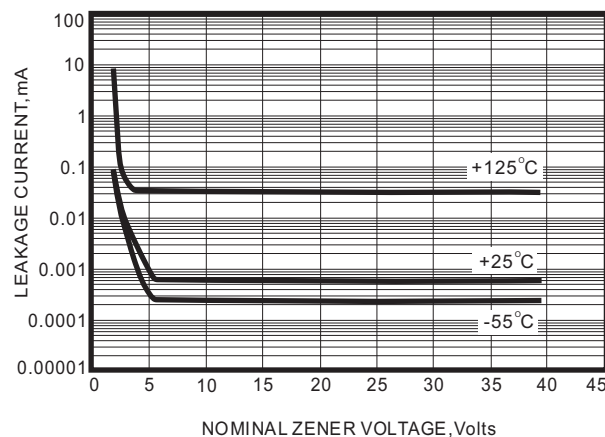
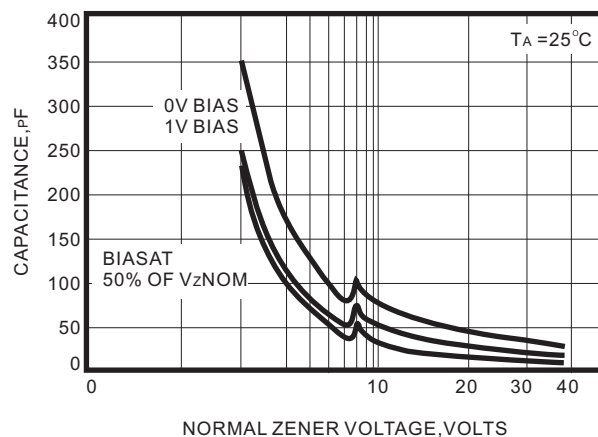


Fig.6 TYPICAL CAPACITANCE



RATING AND CHARACTERISTIC CURVES (CZRER52C2 Thru CZRER52C39)

Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

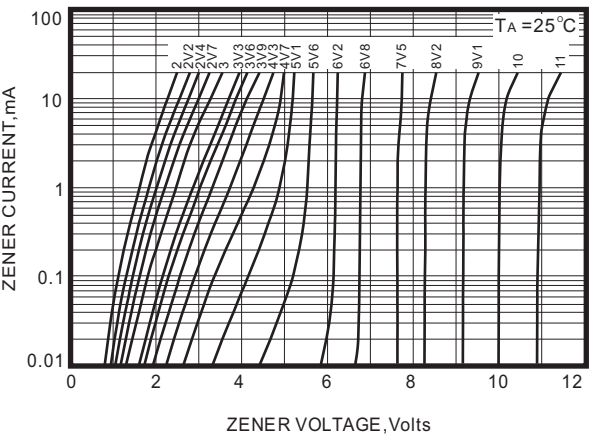


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

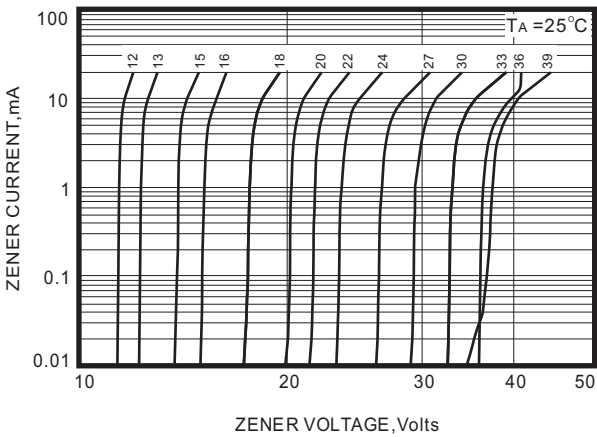
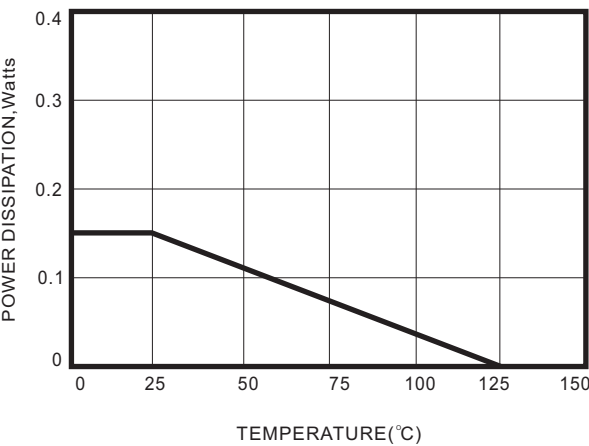
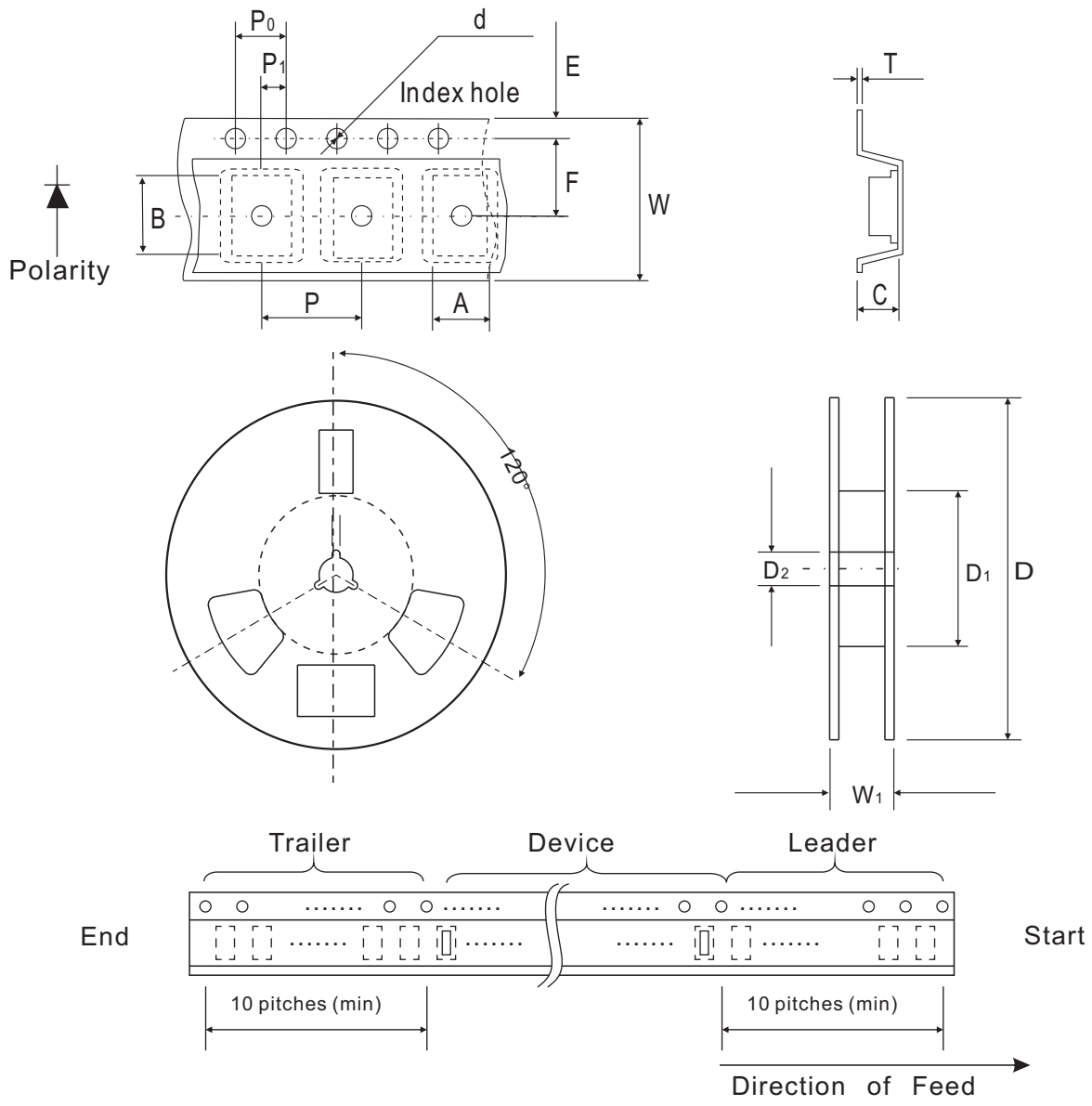


Fig.9 STEADY STATE POWER DERATING



Reel Taping Specification

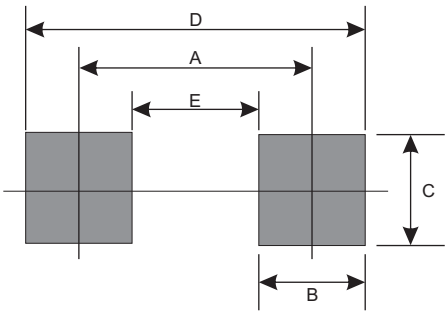


ER/0503	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	0.90 ± 0.10	1.46 ± 0.10	0.80 ± 0.10	1.55 ± 0.05	178 ± 1	60.0 MIN.	13.0 ± 0.20
	(inch)	0.035 ± 0.004	0.057 ± 0.004	0.031 ± 0.004	0.061 ± 0.002	7.008 ± 0.04	2.362 MIN.	0.512 ± 0.008

ER/0503	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.22 ± 0.05	8.00 ± 0.20	13.5 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.008 ± 0.002	0.315 ± 0.008	0.531 MAX.

Suggested PAD Layout

SIZE	ER/0503	
	(mm)	(inch)
A	0.85	0.033
B	0.55	0.022
C	0.85	0.033
D	1.40	0.055
E	0.30	0.118



Standard Package

Case Type	Qty per Reel	Reel Size
	(Pcs)	(inch)
ER/0503	4000	7