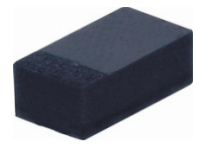


# SMD Zener Diode



SMD Diodes Specialist

## CZRERT52C2 Thru CZRERT52C39 (RoHS Device)



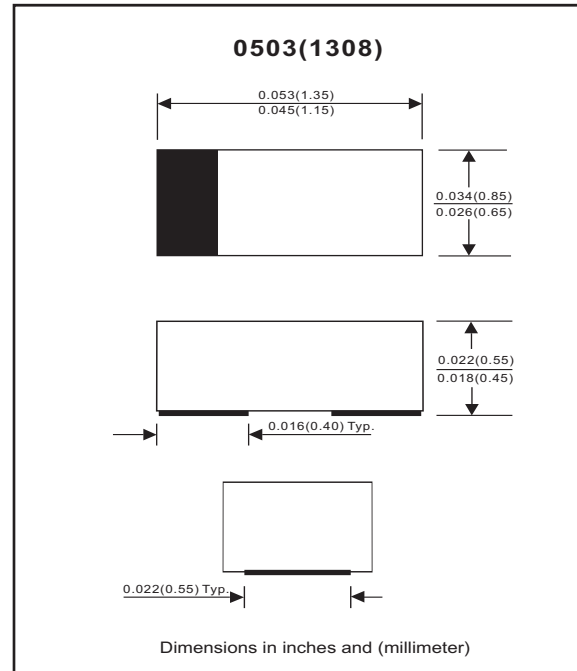
Voltage 2 to 39 Volts  
Power 150 mWatts

### 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: 0.0011 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	°C

## Electrical Characteristics (TA=25°C)

Part Number	Marking Code	Zener Voltage			Operating resistance		Rising operating Resistance		Reverse current	
		Vz(V)			ZZT(Ohm)		ZZK(Ohm)		IR(μA)	
		Min	Max	Iz(mA)	Max	Iz(mA)	Max	Iz(mA)	Max	VR(V)
CZRERT52C2	Z0	1.90	2.10	5	100	5	600	1	100	1
CZRERT52C2V2	Z1	2.09	2.31	5	100	5	600	1	100	1
CZRERT52C2V4	Z2	2.28	2.52	5	85	5	600	1	100	1
CZRERT52C2V7	Z3	2.57	2.84	5	83	5	500	1	75	1
CZRERT52C3	Z4	2.85	3.15	5	95	5	500	1	50	1
CZRERT52C3V3	Z5	3.14	3.47	5	95	5	500	1	25	1
CZRERT52C3V6	Z6	3.42	3.78	5	95	5	500	1	15	1
CZRERT52C3V9	Z7	3.71	4.10	5	95	5	500	1	10	1
CZRERT52C4V3	Z8	4.09	4.52	5	95	5	500	1	5	1
CZRERT52C4V7	Z9	4.47	4.94	5	78	5	500	1	5	2
CZRERT52C5V1	ZA	4.85	5.36	5	60	5	480	1	0.1	0.8
CZRERT52C5V6	ZB	5.32	5.88	5	40	5	400	1	0.1	1
CZRERT52C6V2	ZC	5.89	6.51	5	10	5	200	1	0.1	2
CZRERT52C6V8	ZE	6.46	7.14	5	8	5	150	1	0.1	3
CZRERT52C7V5	ZF	7.13	7.88	5	7	5	50	1	0.1	5
CZRERT52C8V2	ZG	7.79	8.61	5	7	5	50	1	0.1	6
CZRERT52C9V1	ZH	8.65	9.56	5	10	5	50	1	0.1	7
CZRERT52C10	ZJ	9.50	10.50	5	15	5	70	1	0.1	7.5
CZRERT52C11	ZK	10.45	11.55	5	20	5	70	1	0.1	8.5
CZRERT52C12	ZM	11.40	12.60	5	20	5	90	1	0.1	9
CZRERT52C13	ZN	12.35	13.65	5	25	5	110	1	0.1	10
CZRERT52C15	ZP	14.25	15.75	5	30	5	110	1	0.1	11
CZRERT52C16	ZQ	15.20	16.80	5	40	5	170	1	0.1	12
CZRERT52C18	ZR	17.10	18.90	5	50	5	170	1	0.1	14
CZRERT52C20	ZS	19.00	21.00	5	50	5	220	1	0.1	15
CZRERT52C22	ZT	20.90	23.10	5	55	5	220	1	0.1	17
CZRERT52C24	ZU	22.80	25.20	5	80	5	220	1	0.1	18
CZRERT52C27	ZV	25.65	28.35	5	80	5	250	1	0.1	20
CZRERT52C30	ZW	28.50	31.50	5	80	5	250	1	0.1	23
CZRERT52C33	ZX	31.35	34.65	5	80	5	250	1	0.1	25
CZRERT52C36	ZY	34.20	37.80	5	90	5	250	1	0.1	27
CZRERT52C39	ZZ	37.05	40.95	5	90	5	300	1	0.1	29

## RATING AND CHARACTERISTIC CURVES (CZRERT52C2 Thru CZRERT52C39)

Fig.1 TEMPERATURE COEFFICIENTS

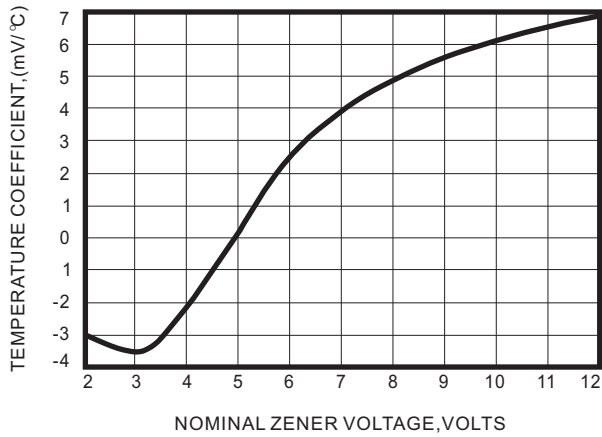


Fig.2 TEMPERATURE COEFFICIENTS

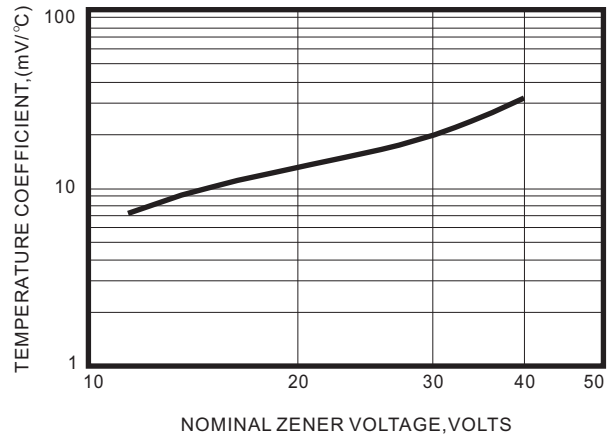


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

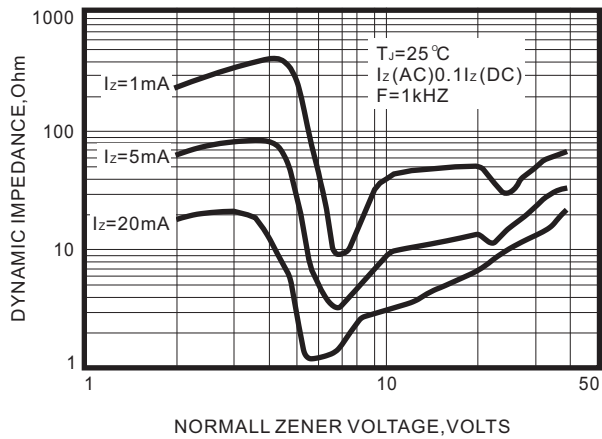


Fig.4 TYPICAL FORWARD VOLTAGE

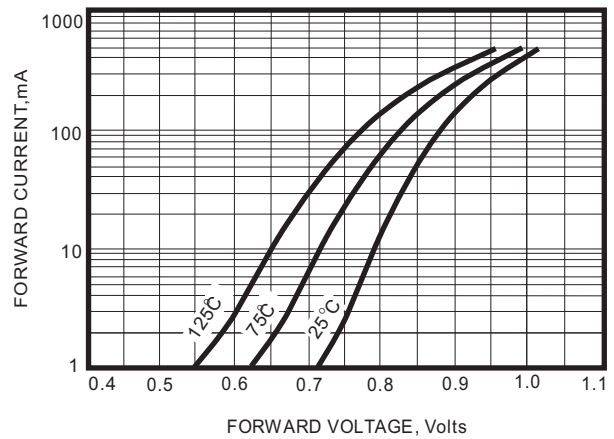


Fig.5 TYPICAL LEAKAGE CURRENT

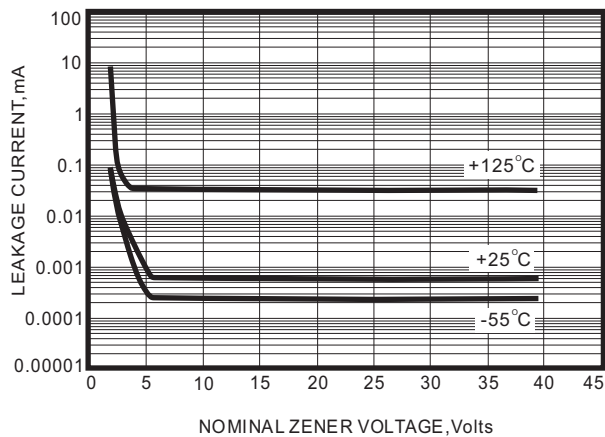
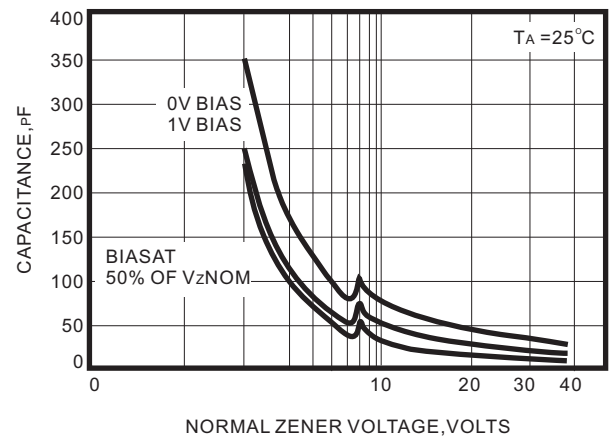


Fig.6 TYPICAL CAPACITANCE



## RATING AND CHARACTERISTIC CURVES (CZRERT52C2 Thru CZRERT52C39)

Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

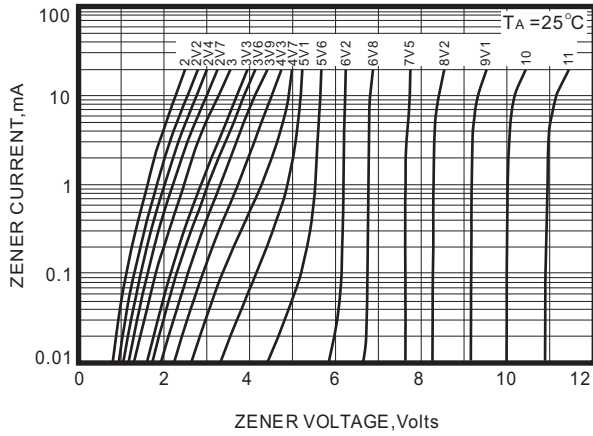


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

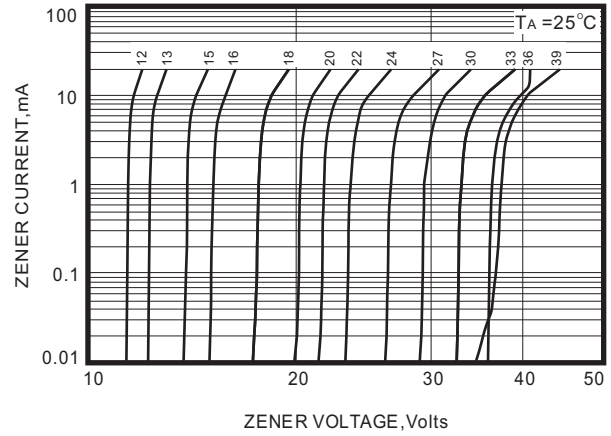
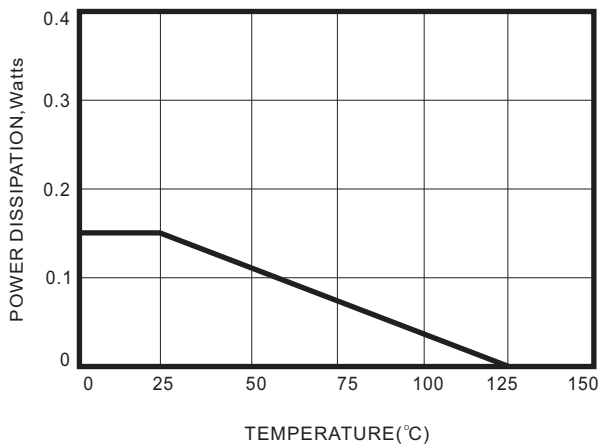
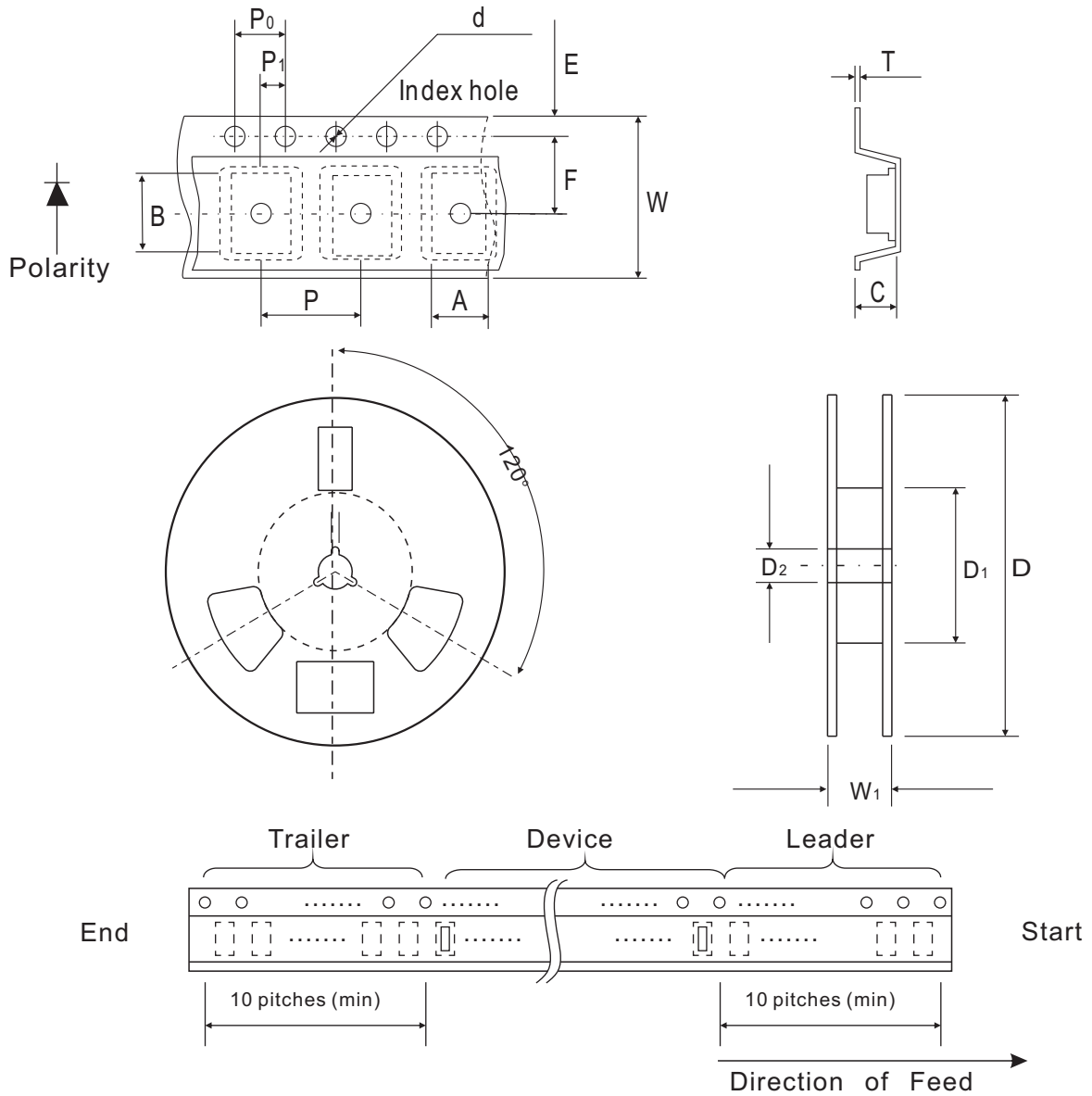


Fig.9 STEADY STATE POWER DERATING



## Reel Taping Specification

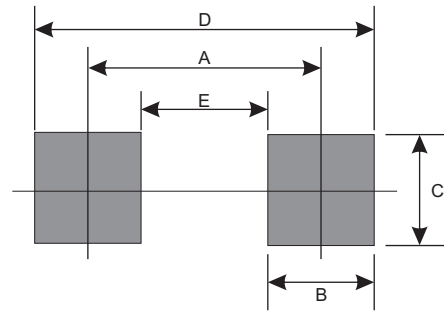


ERT/0503	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	0.90 ± 0.10	1.46 ± 0.10	0.60 ± 0.10	1.55 ± 0.10	178 ± 1	60.0 MIN.	13.0 ± 0.20
	(inch)	0.035 ± 0.004	0.057 ± 0.004	0.024 ± 0.004	0.061 ± 0.004	7.008 ± 0.04	2.362 MIN.	0.512 ± 0.008

ERT/0503	SYMBOL	E	F	P	P <sub>0</sub>	P <sub>1</sub>	T	W	W <sub>1</sub>
	(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	0.009 ± 0.002	0.315 ± 0.008	0.531 MAX.

## Suggested PAD Layout

SIZE	ERT/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)
ERT/0503	5000	7