

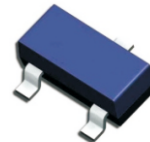
## CZRT55C2V4-HF Thru. CZRT55C39-HF

Voltage: 2.4 to 39 V

Power: 300 mW

RoHS Device

Halogen Free

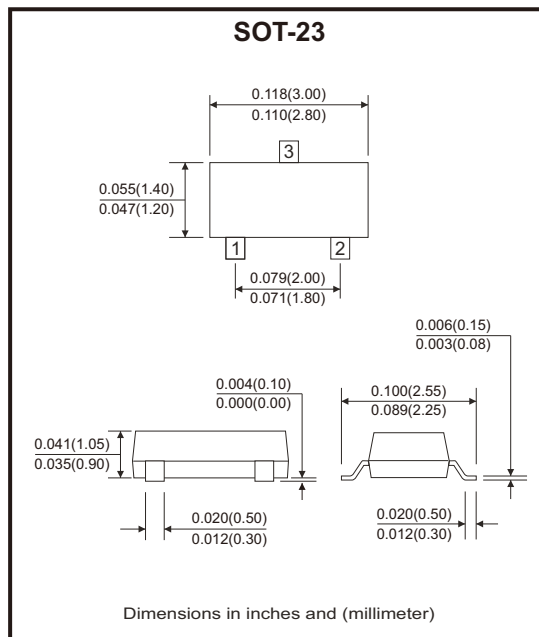


### Features

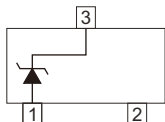
- Planar die construction.
- 300mW power dissipation.
- Zener voltages from 2.4V to 39V.
- Ultra-small surface mount package power dissipation.

### Mechanical data

- Case: SOT-23, molded plastic.
- Mounting position: Any.



### Circuit Diagram



### Maximum Rating (at TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Forward voltage (Note 1) @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Power dissipation (Note 2)	P <sub>D</sub>	300	mW
Thermal resistance from junction to ambient	R <sub>θJA</sub>	417	°C/W
Operation junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Notes: 1. Tested with pulses, period = 5ms, pulse width = 300µs.  
 2. Valid provided that device terminals are kept at ambient temperature.

## Electrical Characteristics (at TA=25°C unless otherwise noted)

Part Number	Zener Voltage Range (Note 1)				Max. Zener Impedance @ f = 1kHz			Max. Reverse Current		Temperature Coefficient of Zener voltage @ I <sub>ZT</sub> = 5mA mV/°C		Marking Code
	V <sub>Z</sub> @ I <sub>ZT</sub>			I <sub>ZT</sub>	Z <sub>ZT</sub> @ I <sub>ZT</sub>	Z <sub>ZK</sub> @ I <sub>ZK</sub>	I <sub>ZK</sub>	I <sub>R</sub>	V <sub>R</sub>	Min.	Max.	
	Min(V)	Nom(V)	Max(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)			
CZRT55C2V4-HF	2.2	2.4	2.6	5.0	100	600	1.0	50	1	-3.5	0	Z11
CZRT55C2V7-HF	2.5	2.7	2.9	5.0	100	600	1.0	20	1	-3.5	0	Z12
CZRT55C3V0-HF	2.8	3.0	3.2	5.0	95	600	1.0	10	1	-3.5	0	Z13
CZRT55C3V3-HF	3.1	3.3	3.5	5.0	95	600	1.0	5.0	1	-3.5	0	Z14
CZRT55C3V6-HF	3.4	3.6	3.8	5.0	90	600	1.0	5.0	1	-3.5	0	Z15
CZRT55C3V9-HF	3.7	3.9	4.1	5.0	90	600	1.0	3.0	1	-3.5	0	Z16
CZRT55C4V3-HF	4.0	4.3	4.6	5.0	90	600	1.0	3.0	1	-3.5	0	Z17
CZRT55C4V7-HF	4.4	4.7	5.0	5.0	80	500	1.0	3.0	2	-3.5	0.2	Z1
CZRT55C5V1-HF	4.8	5.1	5.4	5.0	60	480	1.0	2.0	2	-2.7	1.2	Z2
CZRT55C5V6-HF	5.2	5.6	6.0	5.0	40	400	1.0	1.0	2	-2.0	2.5	Z3
CZRT55C6V2-HF	5.8	6.2	6.6	5.0	10	150	1.0	3.0	4	0.4	3.7	Z4
CZRT55C6V8-HF	6.4	6.8	7.2	5.0	15	80	1.0	2.0	4	1.2	4.5	Z5
CZRT55C7V5-HF	7.0	7.5	7.9	5.0	15	80	1.0	1.0	5	2.5	5.3	Z6
CZRT55C8V2-HF	7.7	8.2	8.7	5.0	15	80	1.0	0.7	5	3.2	6.2	Z7
CZRT55C9V1-HF	8.5	9.1	9.6	5.0	15	100	1.0	0.5	6	3.8	7.0	Z8
CZRT55C10-HF	9.4	10	10.6	5.0	20	150	1.0	0.2	7	4.5	8.0	Z9
CZRT55C11-HF	10.4	11	11.6	5.0	20	150	1.0	0.1	8	5.4	9.0	Y1•
CZRT55C12-HF	11.4	12	12.7	5.0	25	150	1.0	0.1	8	6.0	10.0	Y2•
CZRT55C13-HF	12.4	13	14.1	5.0	30	170	1.0	0.1	8	7.0	11.0	Y3
CZRT55C15-HF	13.8	15	15.6	5.0	30	200	1.0	0.1	10.5	9.2	13.0	Y4
CZRT55C16-HF	15.3	16	17.1	5.0	40	200	1.0	0.1	11.2	10.4	14.0	Y5
CZRT55C18-HF	16.8	18	19.1	5.0	45	225	1.0	0.1	12.6	12.4	16.0	Y6, Y6•
CZRT55C20-HF	18.8	20	21.2	5.0	55	225	1.0	0.1	14.0	14.4	18.0	Y7
CZRT55C22-HF	20.8	22	23.3	5.0	55	250	1.0	0.1	15.4	16.4	20.0	Y8
CZRT55C24-HF	22.8	24	25.6	5.0	70	250	1.0	0.1	16.8	18.4	22.0	Y9
CZRT55C27-HF	25.1	27	28.9	2.0	80	300	0.5	0.1	18.9	21.4	25.3	Y10
CZRT55C30-HF	28.0	30	32.0	2.0	80	300	0.5	0.1	21.0	24.4	29.4	Y11, Y11•
CZRT55C33-HF	31.0	33	35.0	2.0	80	325	0.5	0.1	23.1	27.4	33.4	Y12
CZRT55C36-HF	34.0	36	38.0	2.0	90	350	0.5	0.1	25.2	30.4	37.4	Y13
CZRT55C39-HF	37.0	39	41.0	2.0	130	350	0.5	0.1	27.3	33.4	41.2	Y14

Notes: 1. Tested with pulses, period = 5ms, pulse width = 300μs.

## Rating and Characteristic Curves (CZRT55C2V4-HF Thru. CZRT55C39-HF)

Fig.1 - Zener Characteristics  
(Vz up to 10V)

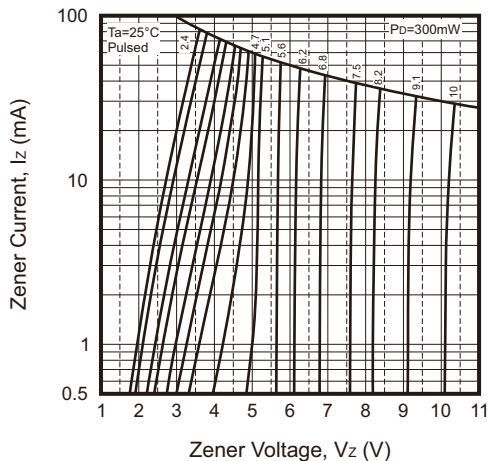


Fig.2 - Zener Characteristics  
(11V to 39V)

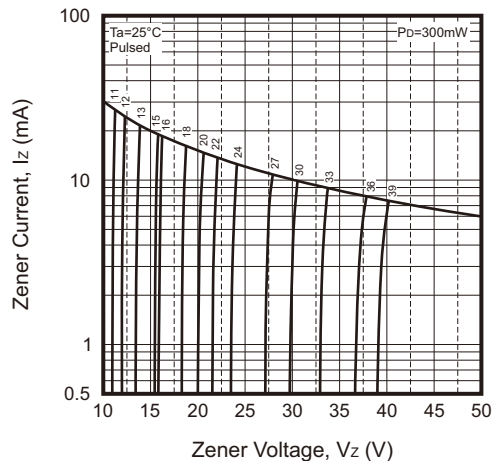


Fig.3 - Temperature Coefficients

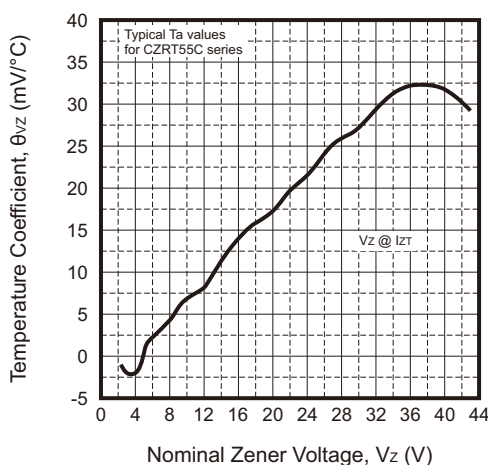


Fig.4 - Typical Leakage Current

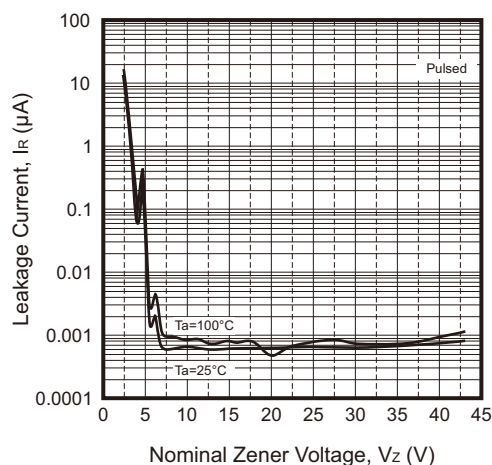


Fig.5 - Typical Capacitance

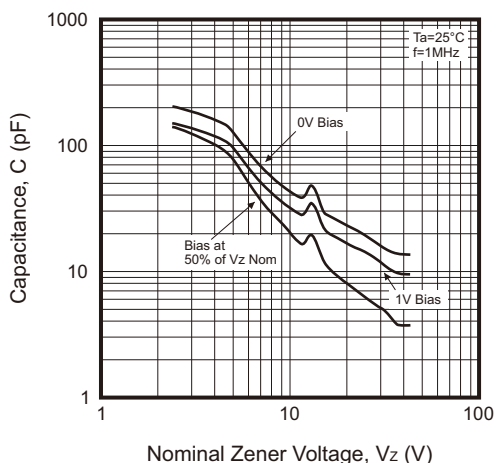
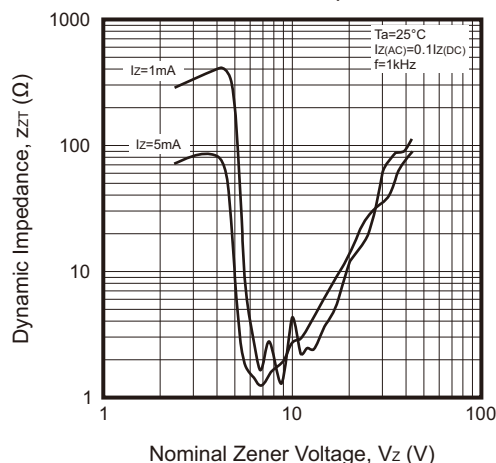
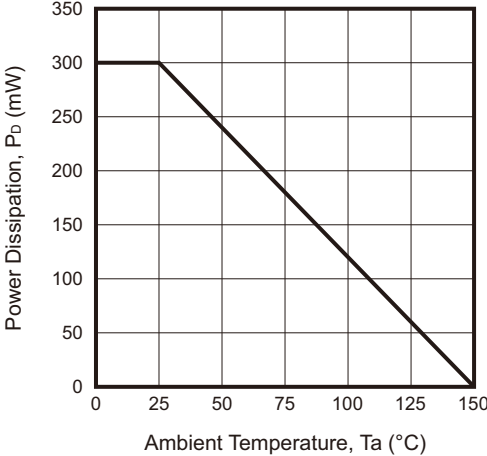


Fig.6 - Effect of Zener Voltage on Zener Impedance

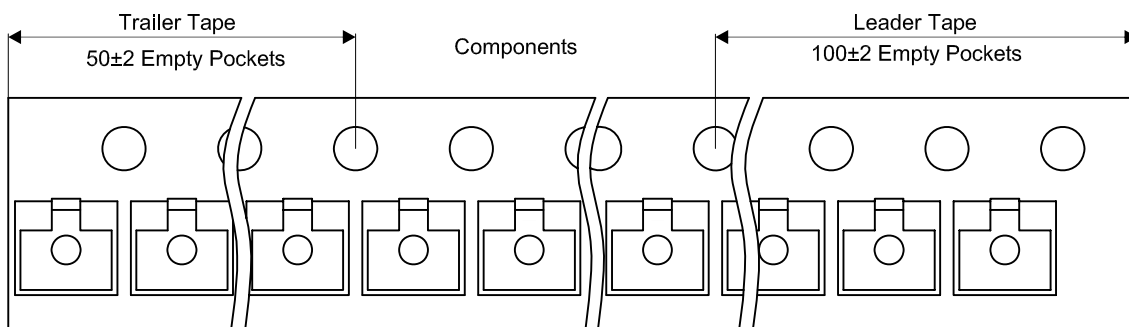
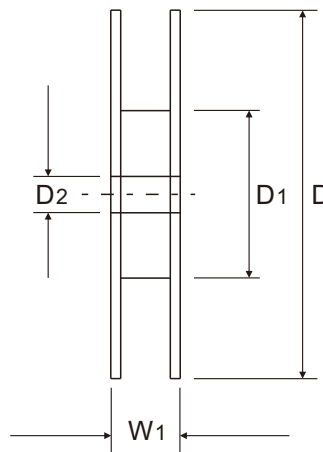
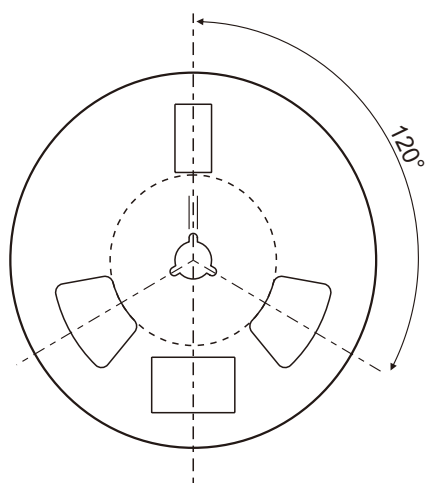
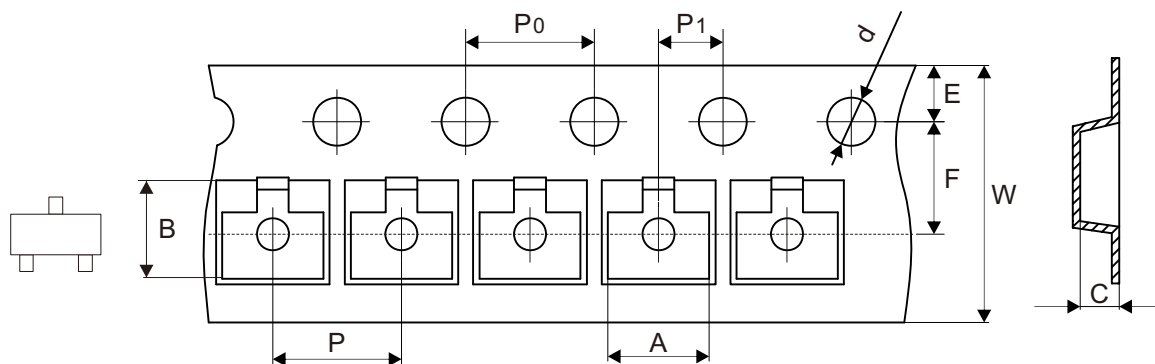


## Rating and Characteristic Curves (CZRT55C2V4-HF Thru. CZRT55C39-HF)

Fig.7 - Power Derating Curve



## Reel Taping Specification

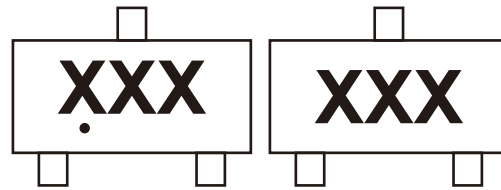


SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	1.50 ± 0.10	178.00 ± 2.00	54.40 ± 1.00	13.00 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	0.059 ± 0.004	7.008 ± 0.079	2.142 ± 0.039	0.512 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	8.00 + 0.30 - 0.10	12.30 ± 1.00
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.315 + 0.012 - 0.004	0.484 ± 0.039

## Marking Code

Part Number	Marking Code
CZRT55C-HF Series	See page 2

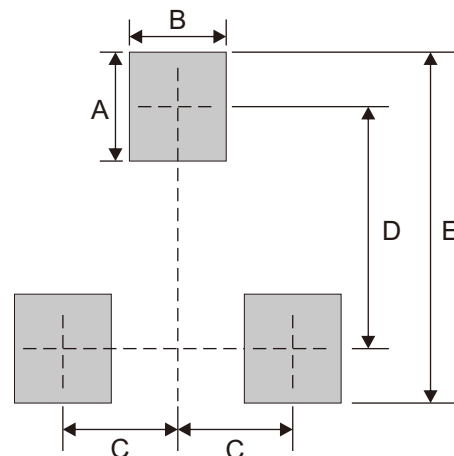


Solid dot = Control code

xx/xxx = Product type marking code

## Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114



Note: 1. The pad layout is for reference purposes only.

## Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7