

CZRQC52CXXXA-HF Series

High-Reliability and High-Performance

Voltage 2 to 39 Volts

Power 125 mWatts

RoHS Device

Halogen Free

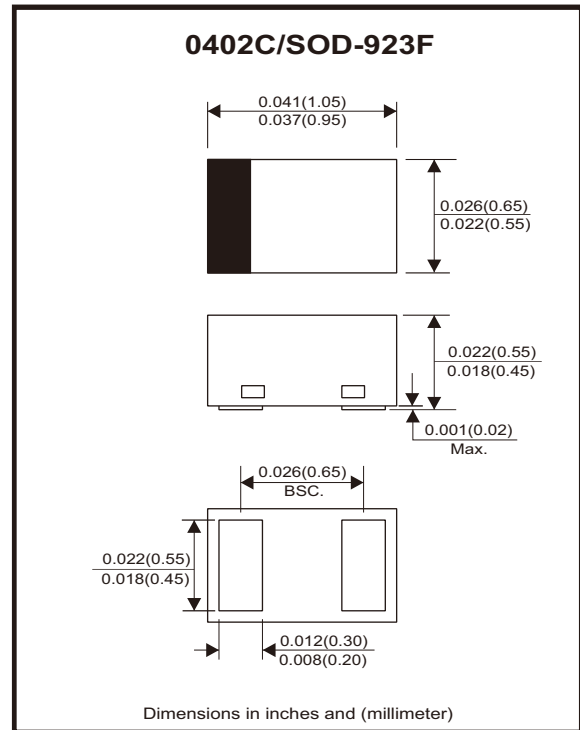


Features

- 125mW Power Dissipation.
- High Voltages from 2 ~ 39 V.
- Designed for mounting on small surface.
- Extremely thin/leadless package.

Mechanical data

- Case: 0402C/SOD-923F standard package.
Molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750,method 2026.
- Polarity: Indicated by cathode band.
- Weight: 0.001 grams (approx.).



Circuit Diagram



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

Parameter	Symbol	Value	Unit
Maximum forward voltage drop at IF = 10 mA	VF	0.9	V
Maximum power dissipation at 25 °C	PD	125	mW
Forward current , surge peak 8.3 ms single half sine-wave superimposed on rate load(JEDEC method)	IFSM	2.0	A
Peak ESD voltage capability (IEC 61000-4-2)	VPV	8	kV
Operating junction temperature	TJ	-55 to +125	°C
Storage temperature range	TSTG	-55 to +125	°C

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

Part Number	Marking Code	Zener Voltage				Operating resistance		Rising operating Resistance		Reverse current	
		V _Z (V)				Z _{ZT} (Ω)		Z _{ZK} (Ω)		I _R (μA)	
		Min	Typ	Max	I _Z (mA)	Max	I _Z (mA)	Max	I _Z (mA)	Max	V _R (V)
CZRQC52C2A-HF	Z0	1.90	2.0	2.10	5	100	5	600	1	100	1
CZRQC52C2V2A-HF	Z1	2.09	2.2	2.31	5	100	5	600	1	100	1
CZRQC52C2V4A-HF	Z2	2.28	2.4	2.52	5	85	5	600	1	100	1
CZRQC52C2V7A-HF	Z3	2.57	2.7	2.84	5	83	5	500	1	75	1
CZRQC52C3A-HF	Z4	2.85	3.0	3.15	5	95	5	500	1	50	1
CZRQC52C3V3A-HF	Z5	3.14	3.3	3.47	5	95	5	500	1	25	1
CZRQC52C3V6A-HF	Z6	3.42	3.6	3.78	5	95	5	500	1	15	1
CZRQC52C3V9A-HF	Z7	3.71	3.9	4.10	5	95	5	500	1	10	1
CZRQC52C4V3A-HF	Z8	4.09	4.3	4.52	5	95	5	500	1	5	1
CZRQC52C4V7A-HF	Z9	4.47	4.7	4.94	5	78	5	500	1	5	2
CZRQC52C5V1A-HF	ZA	4.85	5.1	5.36	5	60	5	480	1	0.1	0.8
CZRQC52C5V6A-HF	ZB	5.32	5.6	5.88	5	40	5	400	1	0.1	1
CZRQC52C6V2A-HF	ZC	5.89	6.2	6.51	5	10	5	200	1	0.1	2
CZRQC52C6V8A-HF	ZE	6.46	6.8	7.14	5	8	5	150	1	0.1	3
CZRQC52C7V5A-HF	ZF	7.13	7.5	7.88	5	7	5	50	1	0.1	5
CZRQC52C8V2A-HF	ZG	7.79	8.2	8.61	5	7	5	50	1	0.1	6
CZRQC52C9V1A-HF	ZH	8.65	9.1	9.56	5	10	5	50	1	0.1	7
CZRQC52C10A-HF	ZJ	9.50	10	10.50	5	15	5	70	1	0.1	7.5
CZRQC52C11A-HF	ZK	10.45	11	11.55	5	20	5	70	1	0.1	8.5
CZRQC52C12A-HF	ZM	11.40	12	12.60	5	20	5	90	1	0.1	9
CZRQC52C13A-HF	ZN	12.35	13	13.65	5	25	5	110	1	0.1	10
CZRQC52C15A-HF	ZP	14.25	15	15.75	5	30	5	110	1	0.1	11
CZRQC52C16A-HF	ZQ	15.20	16	16.80	5	40	5	170	1	0.1	12
CZRQC52C18A-HF	ZR	17.10	18	18.90	5	50	5	170	1	0.1	14
CZRQC52C20A-HF	ZS	19.00	20	21.00	5	50	5	220	1	0.1	15
CZRQC52C22A-HF	ZT	20.90	22	23.10	5	55	5	220	1	0.1	17
CZRQC52C24A-HF	ZU	22.80	24	25.20	5	80	5	220	1	0.1	18
CZRQC52C27A-HF	ZV	25.65	27	28.35	5	80	5	250	1	0.1	20
CZRQC52C30A-HF	ZW	28.50	30	31.50	5	80	5	250	1	0.1	23
CZRQC52C33A-HF	ZX	31.35	33	34.65	5	80	5	250	1	0.1	25
CZRQC52C36A-HF	ZY	34.20	36	37.80	5	90	5	250	1	0.1	27
CZRQC52C39A-HF	ZZ	37.05	39	40.95	5	90	5	300	1	0.1	29

Rating and Characteristic Curves (CZRQC52C2A-HF Thru. CZRQC52C39A-HF)

Fig.1 - Temperature Coefficients

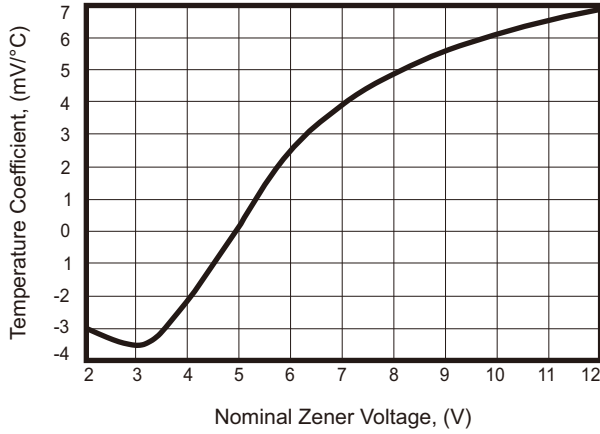


Fig.2 - Temperature Coefficients

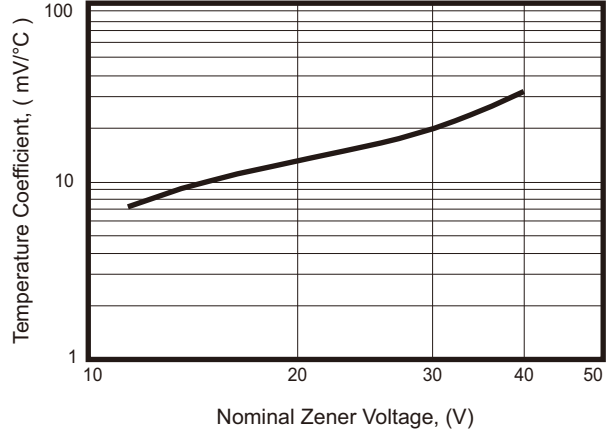


Fig.3 - Effect of Zener Voltage On Zener Impedance

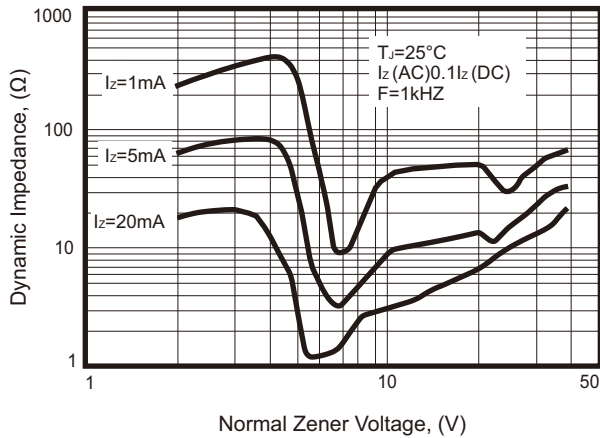


Fig.4 - Typical Forward Voltage

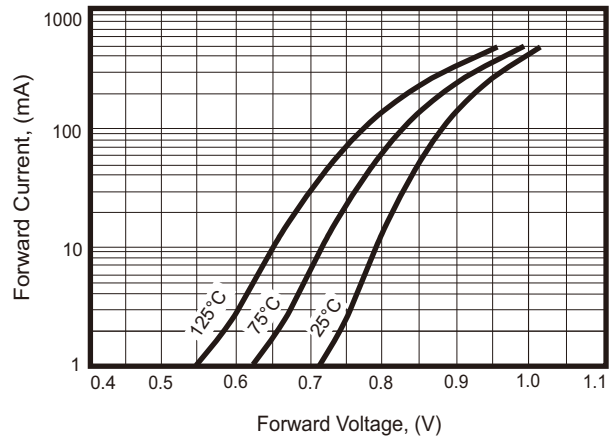


Fig.5 - Typical Leakage Current

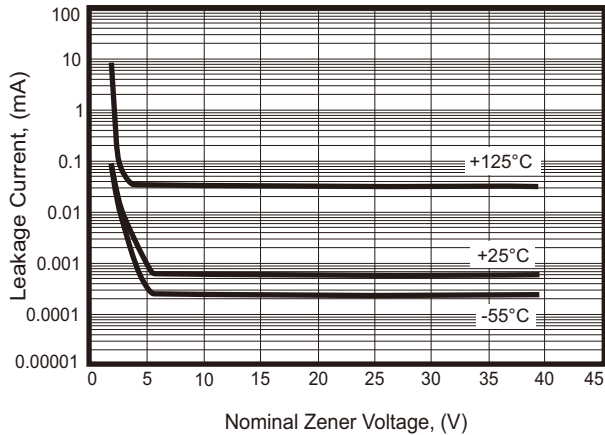
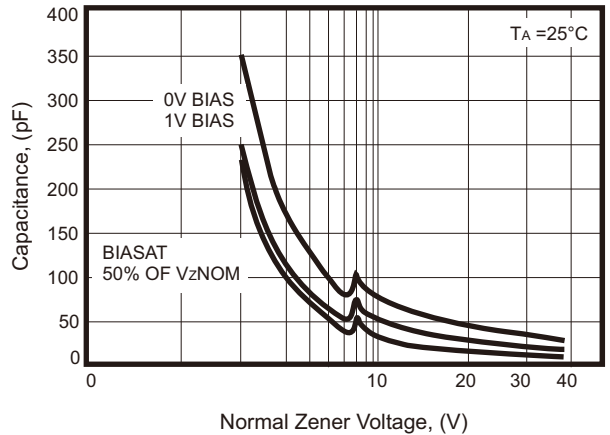


Fig.6 - Typical Capacitance



Rating and Characteristic Curves (CZRQC52C2A-HF Thru. CZRQC52C39A-HF)

Fig.7 - Zener Voltage VS. Zener Current

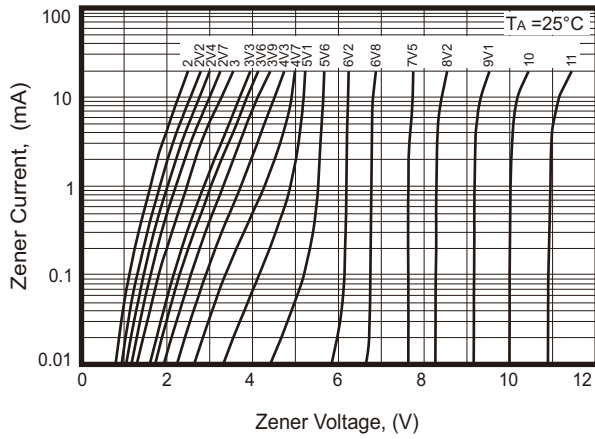


Fig.8 - Zener Voltage VS. Zener Current

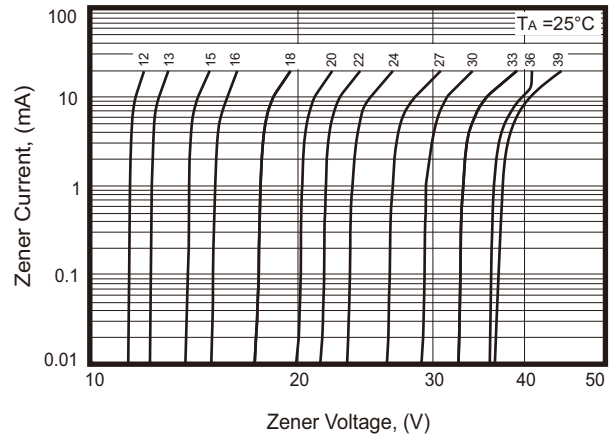
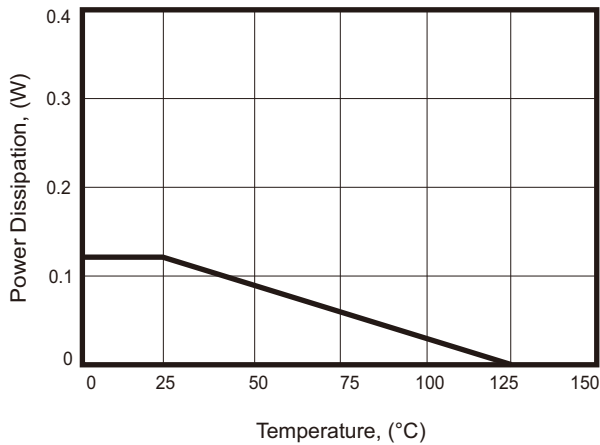
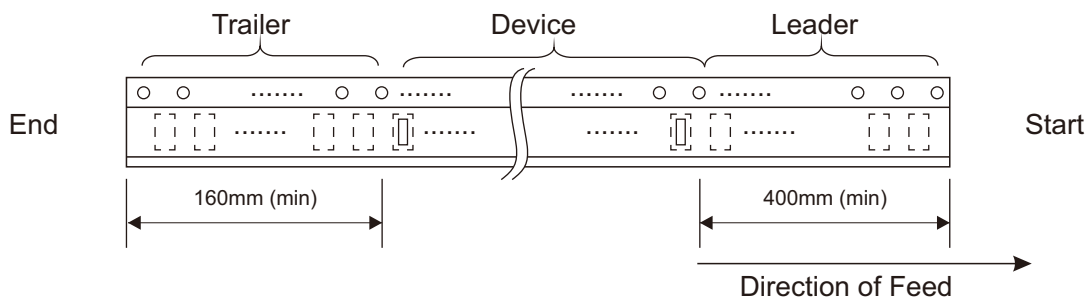
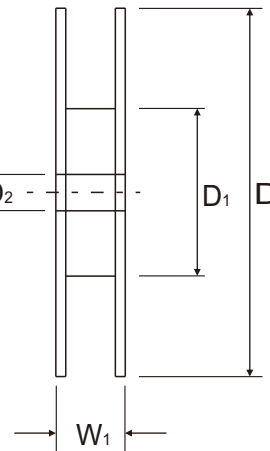
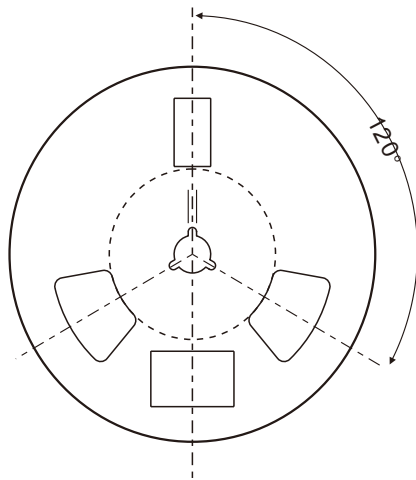
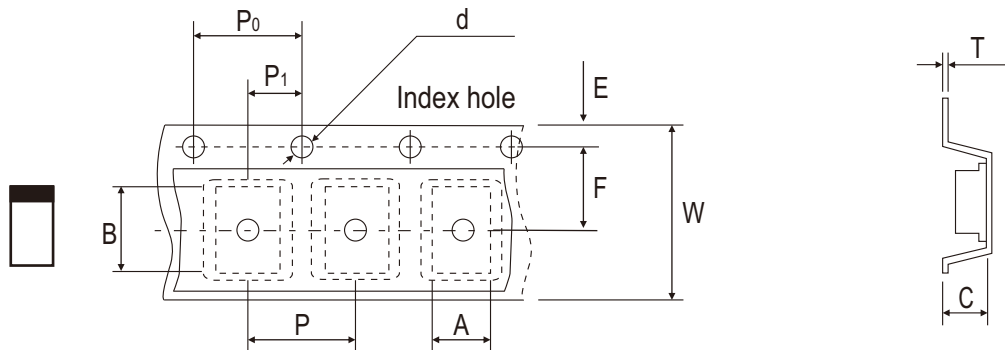


Fig.9 - Steady State Power Derating



Reel Taping Specification



0402C (SOD-923F)	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(mm)	0.75 ± 0.05	1.17 ± 0.05	0.65 ± 0.05	1.50 + 0.10 - 0	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.030 ± 0.002	0.046 ± 0.002	0.026 ± 0.002	0.059 + 0.004 - 0	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0402C (SOD-923F)	SYMBOL	E	F	P	P ₀	P ₁	T	W	W ₁
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.20 + 0.02 - 0.05	8.00 ± 0.20	12.00 + 0.50 - 0
	(inch)	0.069 ± 0.004	0.138 ± 0.004	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.008 + 0.001 - 0.002	0.315 ± 0.008	0.472 + 0.020 - 0

Company reserves the right to improve product design, functions and reliability without notice.

REV:B

Marking Code

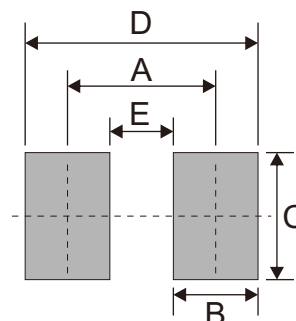
Part Number	Marking Code
CZRQC52C2A-HF Thru. CZRQC52C39A-HF	See Page 2



XX = Marking code
 █ = Cathode Band

Suggested PAD Layout

SIZE	0402C/SOD-923F	
	(mm)	(inch)
A	0.70	0.028
B	0.40	0.016
C	0.60	0.024
D	1.10	0.043
E	0.30	0.012



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
0402C/SOD-923F	5,000	7