

ACZRQC52CXXX-HF Series

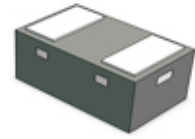
High-Reliability and High-Performance

Voltage 2 to 39 Volts

Power 125 mWatts

RoHS Device

Halogen Free

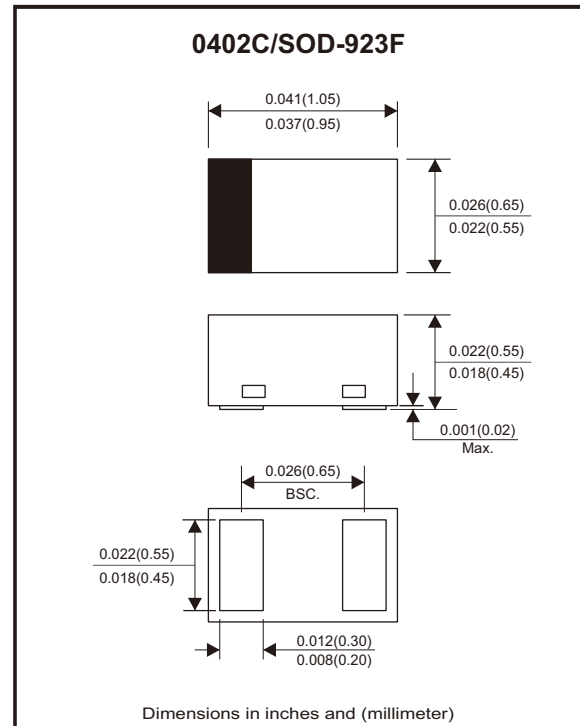


Features

- 125mW Power Dissipation.
- High Voltages from 2 ~ 39 V.
- Designed for mounting on small surface.
- Extremely thin/leadless package.
- AEC-Q101 Qualified.

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 $T_A=25^{\circ}\text{C}$ unless otherwise noted)

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	125	mW
Forward current , surge peak 8.3 ms single half sine-wave superimposed on rate load(JEDEC method)	I_{FSM}	2.0	A
Operating junction temperature range	T_J	-55 to +125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +125	$^{\circ}\text{C}$

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

Part Number	Marking Code	Zener Voltage				Operating resistance		Rising operating Resistance		Reverse current	
		Vz (V)				ZzT (Ω)		Zzk (Ω)		IR (μA)	
		Min	Typ	Max	Iz (mA)	Max	Iz (mA)	Max	Iz (mA)	Max	VR (V)
ACZRQC52C2-HF	Z0	1.90	2.0	2.10	5	100	5	600	1	100	1
ACZRQC52C2V2-HF	Z1	2.09	2.2	2.31	5	100	5	600	1	100	1
ACZRQC52C2V4-HF	Z2	2.28	2.4	2.52	5	85	5	600	1	100	1
ACZRQC52C2V7-HF	Z3	2.57	2.7	2.84	5	83	5	500	1	75	1
ACZRQC52C3-HF	Z4	2.85	3.0	3.15	5	95	5	500	1	50	1
ACZRQC52C3V3-HF	Z5	3.14	3.3	3.47	5	95	5	500	1	25	1
ACZRQC52C3V6-HF	Z6	3.42	3.6	3.78	5	95	5	500	1	15	1
ACZRQC52C3V9-HF	Z7	3.71	3.9	4.10	5	95	5	500	1	10	1
ACZRQC52C4V3-HF	Z8	4.09	4.3	4.52	5	95	5	500	1	5	1
ACZRQC52C4V7-HF	Z9	4.47	4.7	4.94	5	78	5	500	1	5	2
ACZRQC52C5V1-HF	ZA	4.85	5.1	5.36	5	60	5	480	1	0.1	0.8
ACZRQC52C5V6-HF	ZB	5.32	5.6	5.88	5	40	5	400	1	0.1	1
ACZRQC52C6V2-HF	ZC	5.89	6.2	6.51	5	10	5	200	1	0.1	2
ACZRQC52C6V8-HF	ZE	6.46	6.8	7.14	5	8	5	150	1	0.1	3
ACZRQC52C7V5-HF	ZF	7.13	7.5	7.88	5	7	5	50	1	0.1	5
ACZRQC52C8V2-HF	ZG	7.79	8.2	8.61	5	7	5	50	1	0.1	6
ACZRQC52C9V1-HF	ZH	8.65	9.1	9.56	5	10	5	50	1	0.1	7
ACZRQC52C10-HF	ZJ	9.50	10	10.50	5	15	5	70	1	0.1	7.5
ACZRQC52C11-HF	ZK	10.45	11	11.55	5	20	5	70	1	0.1	8.5
ACZRQC52C12-HF	ZM	11.40	12	12.60	5	20	5	90	1	0.1	9
ACZRQC52C13-HF	ZN	12.35	13	13.65	5	25	5	110	1	0.1	10
ACZRQC52C15-HF	ZP	14.25	15	15.75	5	30	5	110	1	0.1	11
ACZRQC52C16-HF	ZQ	15.20	16	16.80	5	40	5	170	1	0.1	12
ACZRQC52C18-HF	ZR	17.10	18	18.90	5	50	5	170	1	0.1	14
ACZRQC52C20-HF	ZS	19.00	20	21.00	5	50	5	220	1	0.1	15
ACZRQC52C22-HF	ZT	20.90	22	23.10	5	55	5	220	1	0.1	17
ACZRQC52C24-HF	ZU	22.80	24	25.20	5	80	5	220	1	0.1	18
ACZRQC52C27-HF	ZV	25.65	27	28.35	5	80	5	250	1	0.1	20
ACZRQC52C30-HF	ZW	28.50	30	31.50	5	80	5	250	1	0.1	23
ACZRQC52C33-HF	ZX	31.35	33	34.65	5	80	5	250	1	0.1	25
ACZRQC52C36-HF	ZY	34.20	36	37.80	5	90	5	250	1	0.1	27
ACZRQC52C39-HF	ZZ	37.05	39	40.95	5	90	5	300	1	0.1	29

Rating and Characteristic Curves (ACZRQC52C2-HF Thru. ACZRQC52C39-HF)

Fig.1 - Temperature Coefficients

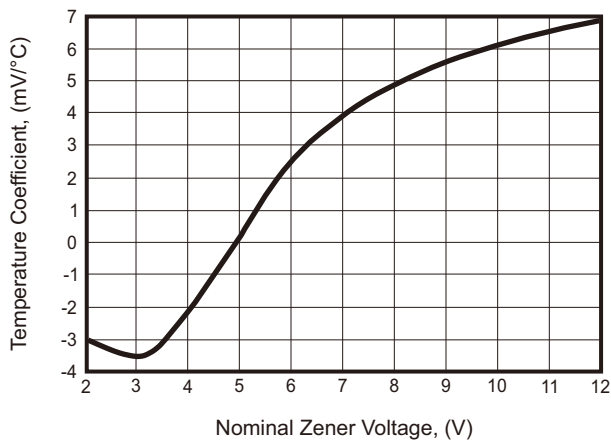


Fig.2 - Temperature Coefficients

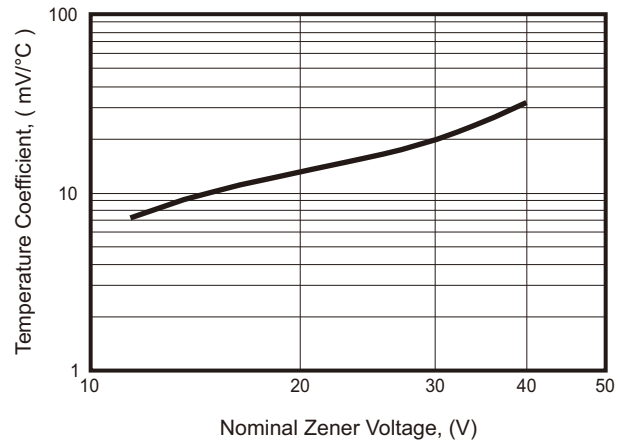


Fig.3 - Effect of Zener Voltage On Zener Impedance

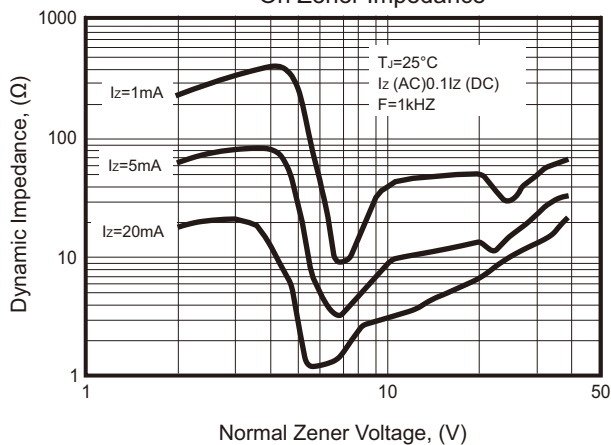


Fig.4 - Typical Forward Voltage

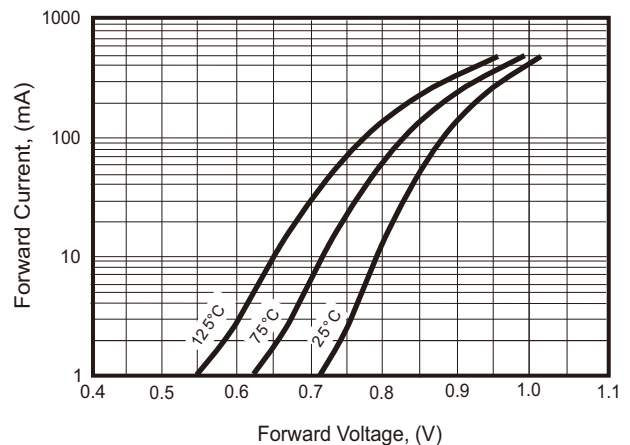


Fig.5 - Typical Leakage Current

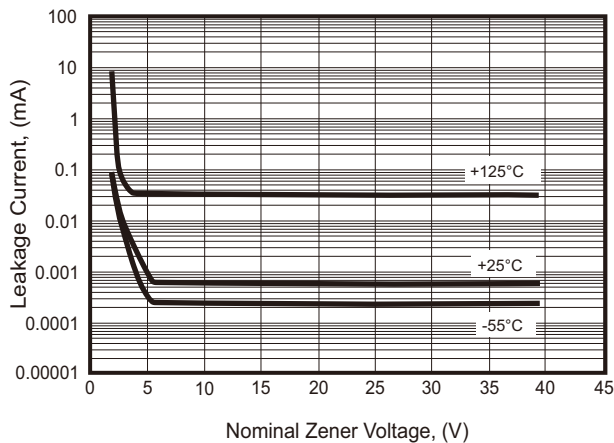
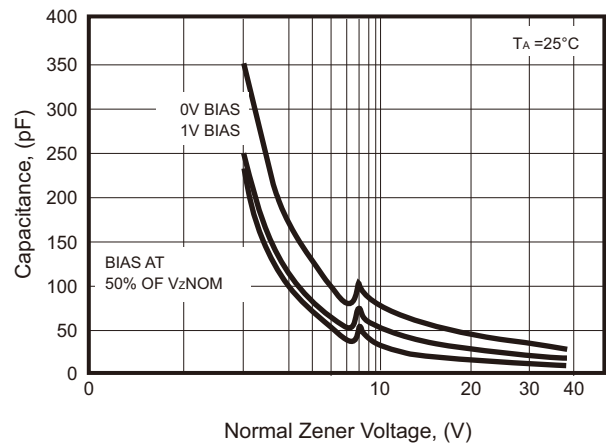


Fig.6 - Typical Capacitance



Rating and Characteristic Curves (ACZRQC52C2-HF Thru. ACZRQC52C39-HF)

Fig.7 - Zener Voltage VS. Zener Current

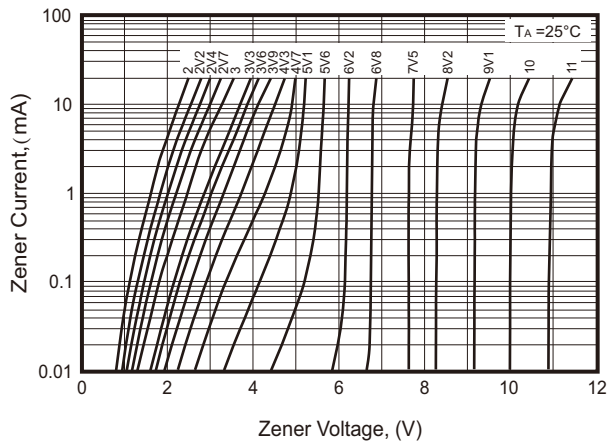


Fig.8 - Zener Voltage VS. Zener Current

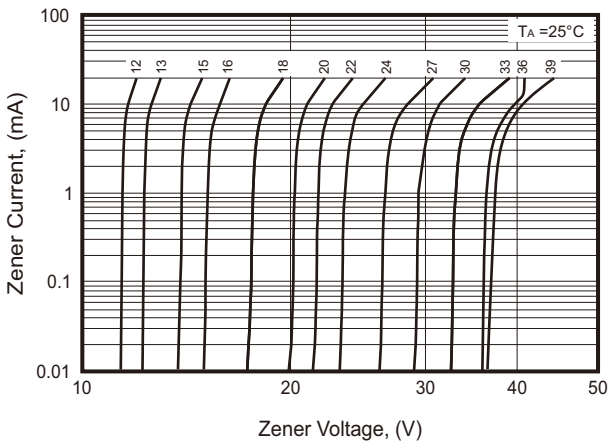
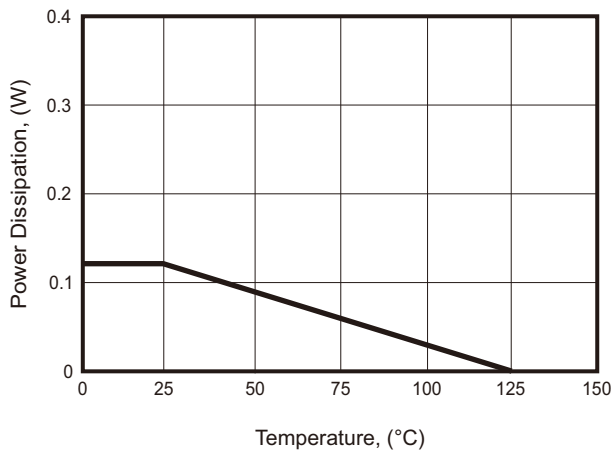
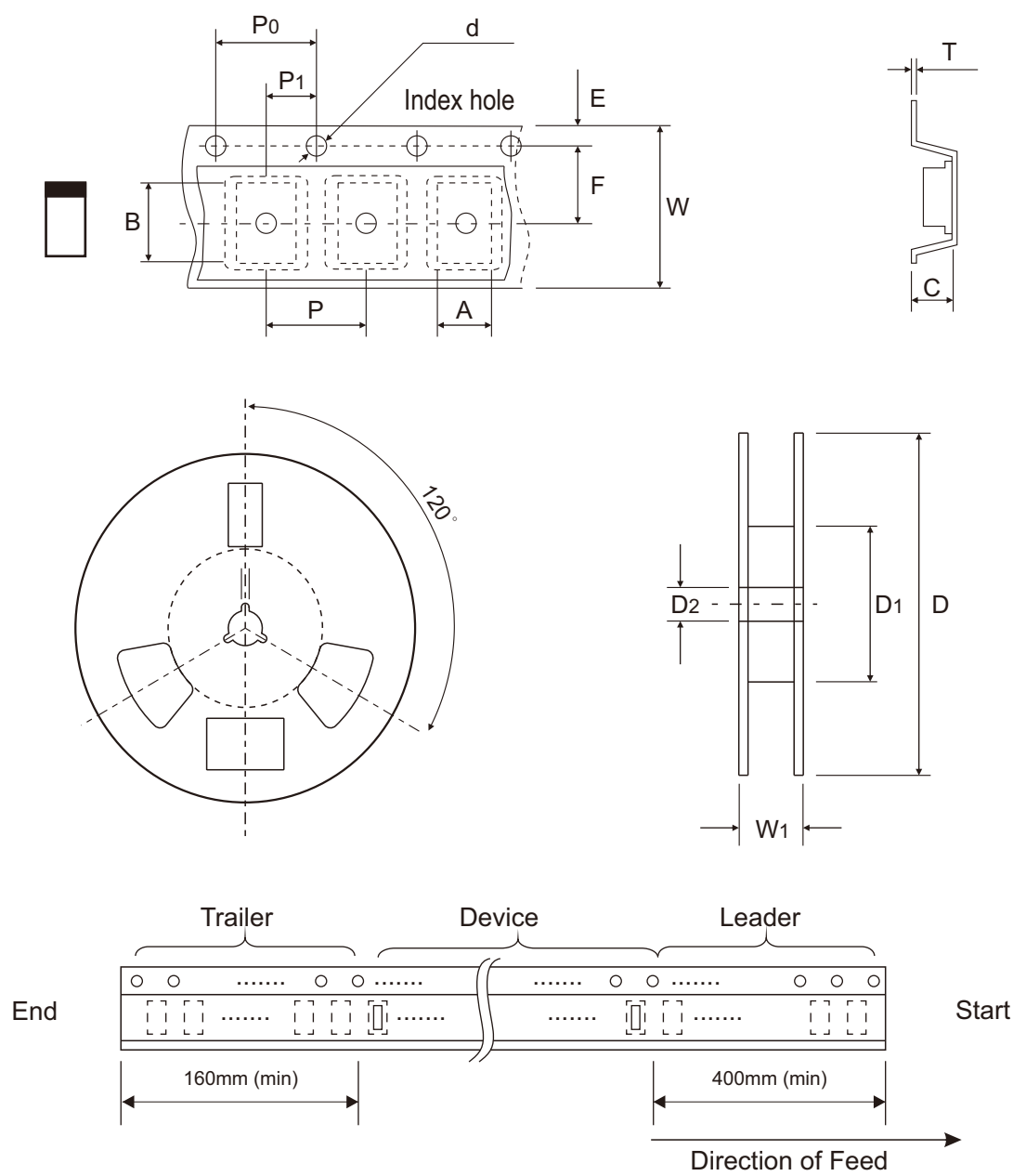


Fig.9 - Steady State Power Derating



Reel Taping Specification



0402C (SOD-923F)	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.78 ± 0.05	1.25 ± 0.05	0.65 ± 0.05	1.50 + 0.10 - 0.00	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.031 ± 0.002	0.049 ± 0.002	0.026 ± 0.002	0.059 + 0.004 - 0.000	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0402C (SOD-923F)	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.10	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.10	0.20 + 0.03 - 0.05	8.00 ± 0.20	12.00 + 0.50 - 0.00
	(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 - 0.000

Marking Code

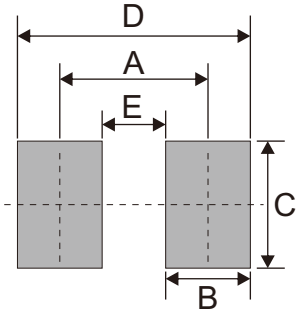
Part Number	Marking Code
ACZRQC52CXXX-HF Series	See Page 2



XX = Marking code
■ = Cathode Band

Suggested P.C.B. 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