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## SMD Zener Diode



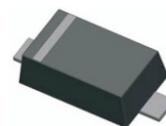
# ACZRM5221B-HF Thru ACZRM5263B-HF

**Voltage: 2.4 to 56 Volts**

**Power: 500 mWatts**

**RoHS Device**

**Halogen Free**

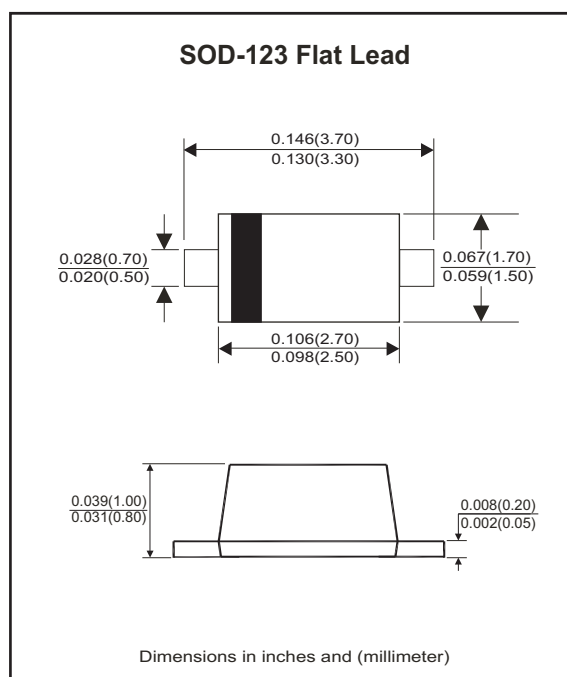


### Features

- Surface Device Type Mounting.
- Moisture Sensitivity Level 1.
- Clip bonding construction, good thermal capability.
- Ideally suited for automated assembly processes.
- Comply with AEC-Q101.

### Mechanical data

- Case: SOD-123 Flat Lead, Molded plastic.
- Terminals: Solder Plated, solderable per MIL-STD-750, method 2026.
- Polarity: Cathode band.



### Circuit Diagram



### Maximum Ratings (@Ta=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	500	mW
Storage Temperature Range	T <sub>STG</sub>	-65 to +150	°C
Operating and Storage Temperature Range	T <sub>OPR</sub>	-65 to +150	°C

- Notes: 1. These ratings are limiting values above which the serviceability of the diode may be impaired.  
 2. Company reserves the right to improve product design, functions and reliability without notice.

## SMD Zener Diode

### Electrical Characteristics (Ta = 25°C)

Part Number	Vz @ IzT (Volts)			ZzT @ IzT (Ohm)		Zzk @ Izk (Ohm)		IR @ VR (µA)		Marking Code
	Min	Nom	Max	Max	IzT(mA)	Max	Izk(mA)	Max	VR(V)	
ACZRM5221B-HF	2.28	2.4	2.52	30	20	1200	0.25	100	1.0	Z2V4
ACZRM5222B-HF	2.38	2.5	2.63	30	20	1250	0.25	100	1.0	Z2V5
ACZRM5223B-HF	2.57	2.7	2.84	30	20	1300	0.25	75	1.0	Z2V7
ACZRM5224B-HF	2.66	2.8	2.94	30	20	1400	0.25	75	1.0	Z2V8
ACZRM5225B-HF	2.85	3.0	3.15	29	20	1600	0.25	50	1.0	Z3V0
ACZRM5226B-HF	3.14	3.3	3.47	28	20	1600	0.25	25	1.0	Z3V3
ACZRM5227B-HF	3.42	3.6	3.78	24	20	1700	0.25	15	1.0	Z3V6
ACZRM5228B-HF	3.71	3.9	4.10	23	20	1900	0.25	10	1.0	Z3V9
ACZRM5229B-HF	4.09	4.3	4.52	22	20	2000	0.25	5	1.0	Z4V3
ACZRM5230B-HF	4.47	4.7	4.94	19	20	1900	0.25	5	2.0	Z4V7
ACZRM5231B-HF	4.85	5.1	5.36	17	20	1600	0.25	5	2.0	Z5V1
ACZRM5232B-HF	5.32	5.6	5.88	11	20	1600	0.25	5	3.0	Z5V6
ACZRM5233B-HF	5.70	6.0	6.30	7	20	1600	0.25	5	3.5	Z6V0
ACZRM5234B-HF	5.89	6.2	6.51	7	20	1000	0.25	5	4.0	Z6V2
ACZRM5235B-HF	6.46	6.8	7.14	5	20	750	0.25	3	5.0	Z6V8
ACZRM5236B-HF	7.13	7.5	7.88	6	20	500	0.25	3	6.0	Z7V5
ACZRM5237B-HF	7.79	8.2	8.61	8	20	500	0.25	3	6.5	Z8V2
ACZRM5238B-HF	8.27	8.7	9.14	8	20	600	0.25	3	6.5	Z8V7
ACZRM5239B-HF	8.65	9.1	9.56	10	20	600	0.25	3	7.0	Z9V1
ACZRM5240B-HF	9.5	10	10.50	17	20	600	0.25	3	8.0	Z10V
ACZRM5241B-HF	10.45	11	11.55	22	20	600	0.25	2	8.4	Z11V
ACZRM5242B-HF	11.40	12	12.60	30	20	600	0.25	1	9.1	Z12V
ACZRM5243B-HF	12.35	13	13.65	13	9.5	600	0.25	0.5	9.9	Z13V
ACZRM5244B-HF	13.30	14	14.70	15	9.0	600	0.25	0.1	10	Z14V
ACZRM5245B-HF	14.25	15	15.75	16	8.5	600	0.25	0.1	11	Z15V
ACZRM5246B-HF	15.20	16	16.80	17	7.8	600	0.25	0.1	12	Z16V
ACZRM5247B-HF	16.15	17	17.85	19	7.4	600	0.25	0.1	13	Z17V
ACZRM5248B-HF	17.10	18	18.90	21	7.0	600	0.25	0.1	14	Z18V
ACZRM5249B-HF	18.05	19	19.95	23	6.6	600	0.25	0.1	14	Z19V
ACZRM5250B-HF	19.00	20	21.00	25	6.2	600	0.25	0.1	15	Z20V

# SMD Zener Diode



## Electrical Characteristics (Ta = 25°C)

Part Number	Vz @ IzT (Volts)			ZzT @ IzT (Ohm)		Zzk @ Izk (Ohm)		IR @ VR (µA)		Marking Code
	Min	Nom	Max	Max	IzT(mA)	Max	Izk(mA)	Max	VR(V)	
ACZRM5251B-HF	20.90	22	23.10	29	5.6	600	0.25	0.1	17	Z22V
ACZRM5252B-HF	22.80	24	25.20	33	5.2	600	0.25	0.1	18	Z24V
ACZRM5253B-HF	23.75	25	26.25	35	5.0	600	0.25	0.1	19	Z25V
ACZRM5254B-HF	25.65	27	28.35	41	4.6	600	0.25	0.1	21	Z27V
ACZRM5255B-HF	26.60	28	29.40	44	4.5	600	0.25	0.1	21	Z28V
ACZRM5256B-HF	28.50	30	31.50	49	4.2	600	0.25	0.1	23	Z30V
ACZRM5257B-HF	31.35	33	34.65	58	3.8	700	0.25	0.1	25	Z33V
ACZRM5258B-HF	34.20	36	37.80	70	3.4	700	0.25	0.1	27	Z36V
ACZRM5259B-HF	37.05	39	40.95	80	3.2	800	0.25	0.1	30	Z39V
ACZRM5260B-HF	40.85	43	45.15	93	3.0	900	0.25	0.1	33	Z43V
ACZRM5261B-HF	44.65	47	49.35	105	2.7	1000	0.25	0.1	36	Z47V
ACZRM5262B-HF	48.45	51	53.55	125	2.5	1100	0.25	0.1	39	Z51V
ACZRM5263B-HF	53.20	56	58.80	150	2.2	1300	0.25	0.1	43	Z56V

Notes: 1. The zener voltage (Vz) is tested under pulse condition of 15mS.

The measured Vz is guaranteed to be within specification with device junction in thermal equilibrium.

2. The device numbers listed have a standard tolerance on the nominal zener voltage of ±5%.

3. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (IzT or Izk) is superimposed to IzT or Izk.

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

# SMD Zener Diode



## RATING AND CHARACTERISTIC CURVES (ACZRM5221B-HF Thru. ACZRM5263B-HF)

Fig.1 - Typical Forward Voltage

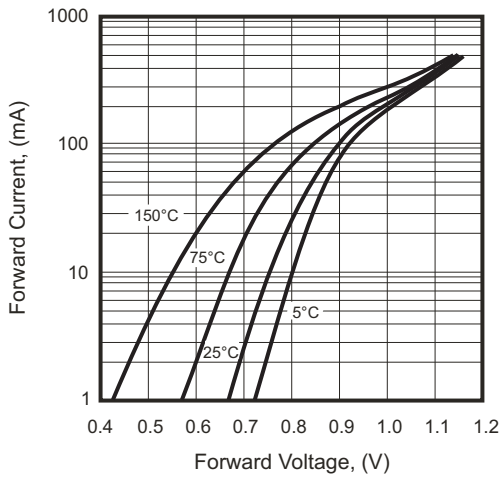


Fig.2 - Effect Of Zener Voltage On Zener Impedance

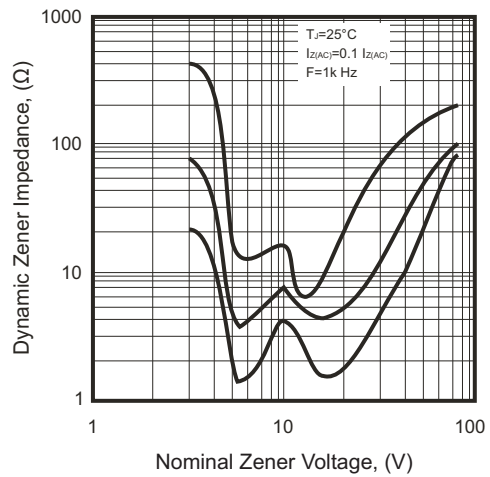


Fig.3 - Power Dissipation VS. Ambient Temp.

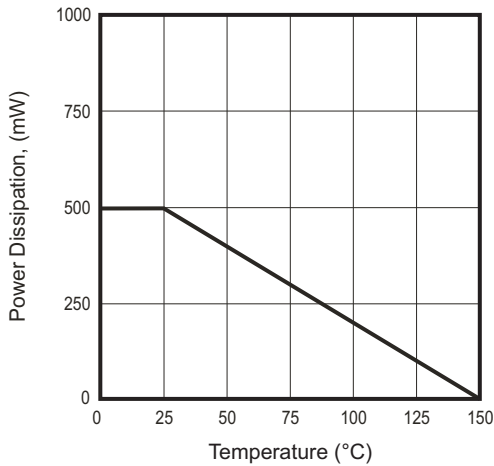
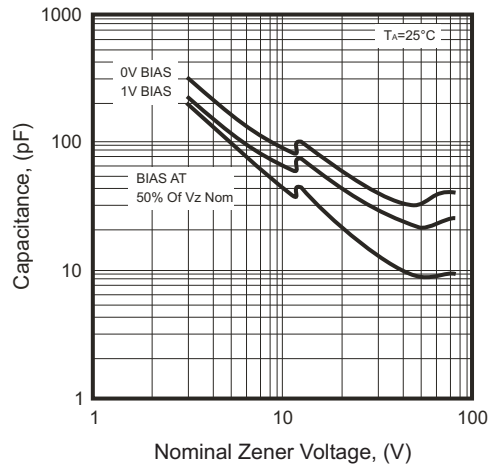


Fig.4 - Typical Capacitance



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## RATING AND CHARACTERISTIC CURVES (ACZRM5221B-HF Thru. ACZRM5263B-HF)

Fig.5 - Zener Breakdown Characteristics

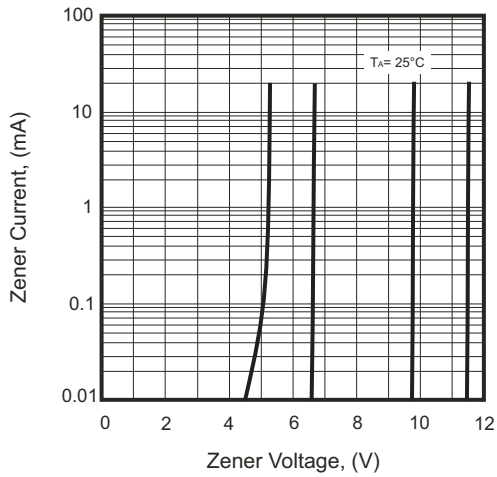


Fig.6 - Zener Breakdown Characteristics

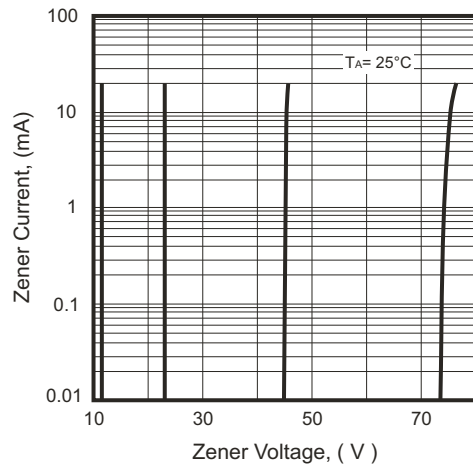
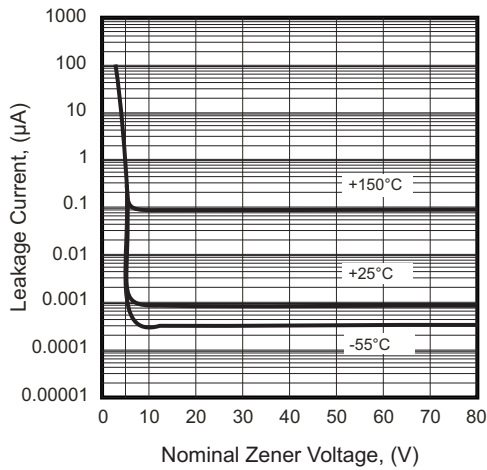


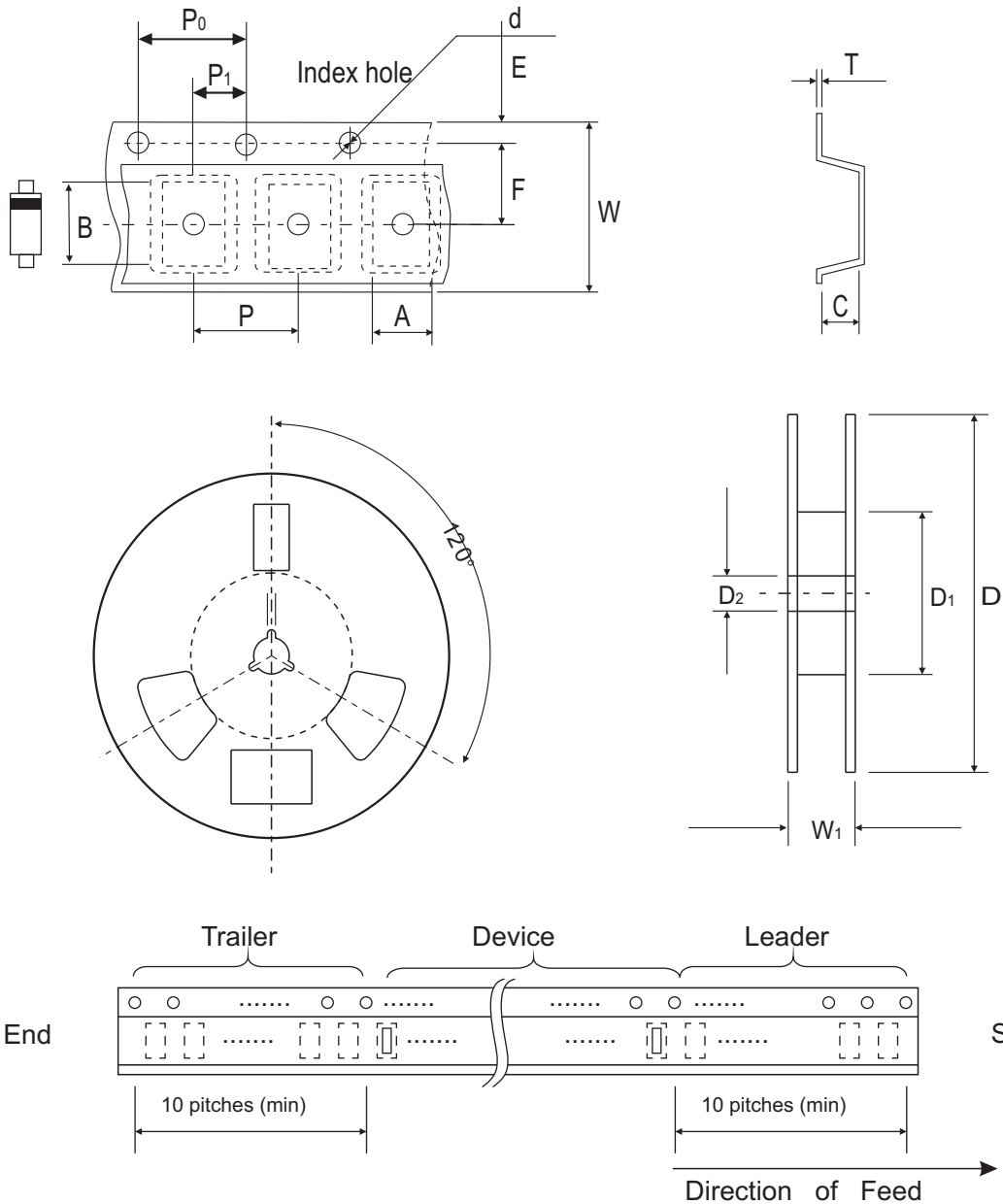
Fig.7 - Typical Leakage Current



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## Reel Taping Specification



SOD-123FL	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	1.85 ± 0.10	3.94 ± 0.10	1.58 ± 0.10	1.55 + 0.10	178 MAX.	50.0 MIN.	13.0 ± 0.20
	(inch)	0.073 ± 0.004	0.155 ± 0.004	0.062 ± 0.004	0.061 + 0.004	7.008 MAX.	1.969 MIN.	0.512 ± 0.008

SOD-123FL	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	0.40 Max.	8.00 ± 0.30	14.4 MAX.
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.004	0.016 Max.	0.315 ± 0.012	0.567 MAX.

## SMD Zener Diode

### Marking Code

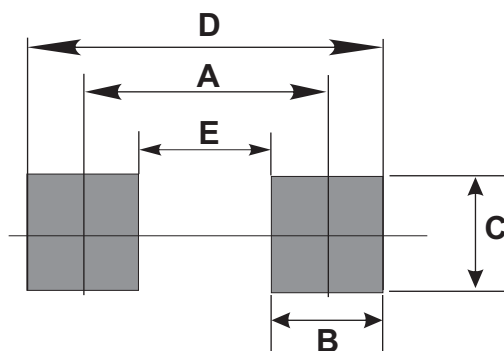
Part Number	Marking Code
ACZRM5221B ~ 5263B-HF	XXXX



Product type marking code (see page.2~3)

### Suggested PAD Layout

SIZE	SOD-123FL	
	(mm)	(inch)
A	2.90	0.132
B	1.10	0.031
C	1.10	0.039
D	4.00	0.163
E	1.60	0.100



### Standard Packaging

Case Type	REEL PACK	
	REEL ( pcs )	Reel Size (inch)
SOD-123FL	3,000	7