

Small Signal Product

500mW, Hermetically Sealed Glass Zener Diodes

FEATURES

- Zener voltage range : 2.0V to 39V
- DO-34 package (JEDEC DO-204)
- Through-hole device type mounting
- Hermetically sealed glass
- Compression bonded construction
- All external surfaces are corrosion resistant and leads are readily solderable
- RoHS compliant
- Solder hot dip Tin (Sn) lead finish
- Cathode indicated by polarity band



DO-34



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power dissipation	P _D	500	mW
Lead temperature (1/16" from case for 10 seconds)	L _t	230	°C
Operating junction temperature	T _J	175	°C
Storage temperature range	T _{STG}	-65 to +200	°C

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RATINGS AND CHARACTERISTICS CURVES

 (T_A=25°C unless otherwise noted)

Type Number	Tolerance		Marking code	V _Z @ I _{ZT} (Volt)			I _{ZT} (mA)	Z _{ZT} @ I _{ZT} (Ω) Max	Z _{ZK} @ I _{ZK} (Ω) Max	I _{ZK} (mA)	I _R (μA) Max	V _R (V)
				Nom	Min	Max						
MTZJ2V0	A	5.5%	2V0A	1.990	1.88	2.10	5	100	1000	0.5	120	0.5
	B	4.3%	2V0B	2.110	2.02	2.20						
MTZJ2V2	A	4.0%	2V2A	2.210	2.12	2.30	5	100	1000	0.5	100	0.7
	B	4.1%	2V2B	2.315	2.22	2.41						
MTZJ2V4	A	3.9%	2V4A	2.425	2.33	2.52	5	100	1000	0.5	120	1.0
	B	4.0%	2V4B	2.530	2.43	2.63						
MTZJ2V7	A	4.0%	2V7A	2.645	2.54	2.75	5	110	1000	0.5	100	1.0
	B	3.9%	2V7B	2.800	2.69	2.91						
MTZJ3V0	A	3.7%	3V0A	2.960	2.85	3.07	5	120	1000	0.5	50	1.0
	B	3.4%	3V0B	3.115	3.01	3.22						
MTZJ3V3	A	3.4%	3V3A	3.270	3.16	3.38	5	120	1000	0.5	20	1.0
	B	3.1%	3V3B	3.425	3.32	3.53						
MTZJ3V6	A	3.6%	3V6A	3.575	3.455	3.695	5	100	1000	1.0	10	1.0
	B	3.3%	3V6B	3.723	3.60	3.845						
MTZJ3V9	A	3.5%	3V9A	3.875	3.74	4.01	5	100	1000	1.0	5	1.0
	B	3.3%	3V9B	4.025	3.89	4.16						
MTZJ4V3	A	3.0%	4V3A	4.165	4.04	4.29	5	100	1000	1.0	5.0	1.0
	B	3.0%	4V3B	4.300	4.17	4.43						
	C	3.0%	4V3C	4.435	4.30	4.57						
MTZJ4V7	A	2.6%	4V7A	4.56	4.44	4.68	5	80	900	1.0	5.0	1.0
	B	2.8%	4V7B	4.68	4.55	4.80						
	C	2.7%	4V7C	4.81	4.68	4.93						
MTZJ5V1	A	2.6%	5V1A	4.94	4.81	5.07	5	80	800	1.0	5.0	1.5
	B	2.6%	5V1B	5.07	4.94	5.20						
	C	2.7%	5V1C	5.23	5.09	5.37						
MTZJ5V6	A	2.4%	5V6A	5.41	5.28	5.55	5	60	500	1.0	5.0	2.5
	B	2.5%	5V6B	5.59	5.45	5.73						
	C	2.6%	5V6C	5.76	5.61	5.91						
MTZJ6V2	A	2.7%	6V2A	5.94	5.78	6.09	5	60	300	1.0	5.0	3.0
	B	2.6%	6V2B	6.12	5.96	6.27						
	C	2.5%	6V2C	6.28	6.12	6.44						
MTZJ6V8	A	2.6%	6V8A	6.46	6.29	6.63	5	20	150	0.5	2.0	3.5
	B	2.6%	6V8B	6.66	6.49	6.83						
	C	2.6%	6V8C	6.84	6.66	7.01						
MTZJ7V5	A	2.7%	7V5A	7.04	6.85	7.22	5	20	120	0.5	0.5	4.0
	B	2.6%	7V5B	7.26	7.07	7.45						
	C	2.5%	7V5C	7.48	7.29	7.67						
MTZJ8V2	A	2.6%	8V2A	7.73	7.53	7.92	5	20	120	0.5	0.5	5.0
	B	2.6%	8V2B	7.99	7.78	8.19						
	C	2.5%	8V2C	8.24	8.03	8.45						
MTZJ9V1	A	2.6%	9V1A	8.51	8.29	8.73	5	25	120	0.5	0.5	6.0
	B	2.5%	9V1B	8.79	8.57	9.01						
	C	2.6%	9V1C	9.07	8.83	9.30						

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Type Number	Tolerance		Marking code	V _Z @ I _{ZT} (Volt)			I _{ZT} (mA)	Z _{ZT} @ I _{ZT} (Ω) Max	Z _{ZK} @ I _{ZK} (Ω) Max	I _{ZK} (mA)	I _R (μA) Max	V _R (V)
				Nom	Min	Max						
MTZJ10	A	2.6%	10VA	9.36	9.12	9.59	5	30	120	0.5	0.2	7.0
	B	2.6%	10VB	9.66	9.41	9.90						
	C	2.5%	10VC	9.95	9.70	10.20						
	D	2.5%	10VD	10.19	9.97	10.44						
MTZJ11	A	2.6%	11VA	10.45	10.18	10.71	5	30	120	0.5	0.2	8.0
	B	2.6%	11VB	10.78	10.500	11.05						
	C	2.5%	11VC	11.10	10.82	11.38						
MTZJ12	A	2.5%	12VA	11.42	11.13	11.71	5	30	110	0.5	0.2	9.0
	B	2.6%	12VB	11.74	11.44	12.03						
	C	2.6%	12VC	12.05	11.74	12.35						
MTZJ13	A	2.6%	13VA	12.43	12.11	12.75	5	35	110	0.5	0.2	10
	B	2.6%	13VB	12.88	12.55	13.21						
	C	2.6%	13VC	13.33	12.99	13.66						
MTZJ15	A	2.5%	15VA	13.79	13.44	14.13	5	40	110	0.5	0.2	11
	B	2.6%	15VB	14.26	13.89	14.62						
	C	2.5%	15VC	14.72	14.35	15.09						
MTZJ16	A	2.6%	16VA	15.19	14.80	15.57	5	40	150	0.5	0.2	12
	B	2.6%	16VB	15.65	15.25	16.04						
	C	2.5%	16VC	16.10	15.69	16.51						
MTZJ18	A	2.5%	18VA	16.64	16.22	17.06	5	45	150	0.5	0.2	13
	B	2.5%	18VB	17.26	16.82	17.70						
	C	2.6%	18VC	17.88	17.42	18.33						
MTZJ20	A	2.5%	20VA	18.49	18.02	18.96	5	55	200	0.5	0.5	15
	B	2.5%	20VB	19.11	18.63	19.59						
	C	2.5%	20VC	19.73	19.23	20.22						
	D	2.5%	20VD	20.22	19.72	20.72						
MTZJ22	A	2.2%	22VA	20.68	20.15	21.2	5	30	200	0.5	0.2	17
	B	2.5%	22VB	21.18	20.64	21.71						
	C	2.5%	22VC	21.63	21.08	22.17						
	D	2.5%	22VD	22.08	21.52	22.63						
MTZJ24	A	2.5%	24VA	22.62	22.02	23.18	5	35	200	0.5	0.2	19
	B	2.5%	24VB	23.19	22.61	23.77						
	C	2.5%	24VC	23.72	23.12	24.31						
	D	2.5%	24VD	24.24	23.63	24.85						
MTZJ27	A	2.5%	27VA	24.89	24.26	25.52	5	45	250	0.5	0.2	21
	B	2.5%	27VB	25.62	24.97	26.26						
	C	2.5%	27VC	26.29	25.63	26.95						
	D	2.5%	27VD	26.97	26.29	27.64						
MTZJ30	A	2.5%	30VA	27.69	26.99	28.39	5	55	250	0.5	0.2	23
	B	2.5%	30VB	28.42	27.70	29.13						
	C	2.5%	30VC	29.09	28.36	29.82						
	D	2.5%	30VD	29.77	29.02	30.51						

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Type Number	Tolerance		Marking code	$V_Z @ I_{ZT}$ (Volt)			I_{ZT} (mA)	$Z_{ZT} @ I_{ZT}$ (Ω) Max	$Z_{ZK} @ I_{ZK}$ (Ω) Max	I_{ZK} (mA)	I_R (μ A) Max	V_R (V)
				Nom	Min	Max						
MTZJ33	A	2.5%	33VA	30.45	29.68	31.22	5	65	250	0.5	0.2	25
	B	2.5%	33VB	31.10	30.32	31.88						
	C	2.5%	33VC	31.70	30.90	32.50						
	D	2.5%	33VD	32.30	31.49	33.11						
MTZJ36	A	2.5%	36VA	32.97	32.14	33.79	5	75	250	0.5	0.2	27
	B	2.5%	36VB	33.64	32.79	34.49						
	C	2.5%	36VC	34.27	33.40	35.13						
	D	2.5%	36VD	34.89	34.01	35.77						
MTZJ39	A	2.5%	39VA	35.58	34.68	36.47	5	85	250	0.5	0.2	30
	B	2.5%	39VB	36.28	35.36	37.19						
	C	2.5%	39VC	36.93	36.00	37.85						
	D	2.5%	39VD	37.58	36.63	38.52						

- Notes: 1. The Zener Voltage subdivision (V_Z) is measured 40ms after diode is powered up.
 2. The operating resistance (Z_{ZT} or Z_{ZK}) is measured by superimposing a minute alternation current in the regulated current (I_Z).
 3. When ordering, please specify tolerance A, B, C or D

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Fig. 1 $V_Z - I_Z$ Characteristics

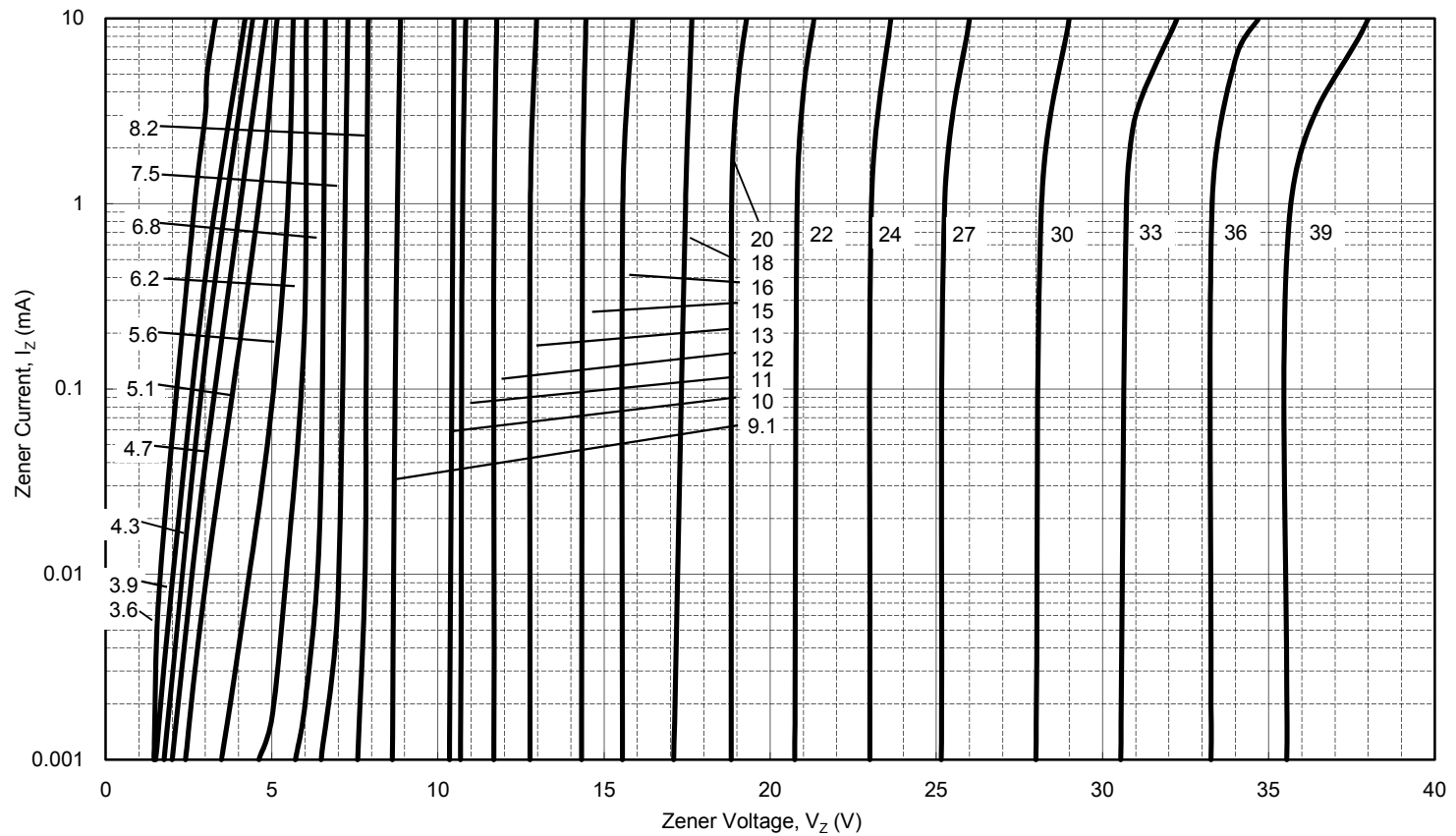


Fig. 2 $P_D - T_A$ Characteristics

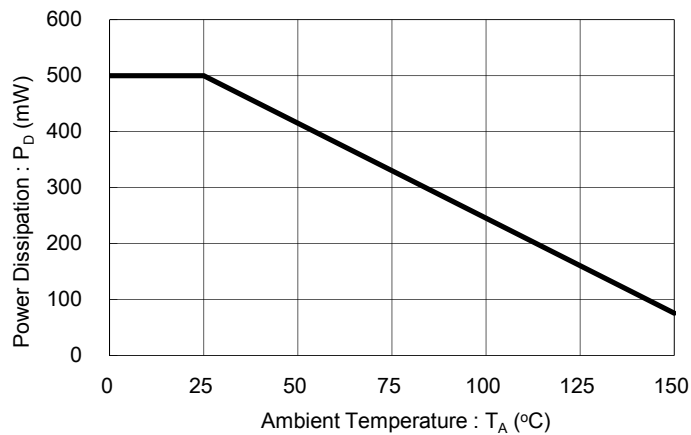


Fig. 3 PRSM - Time Characteristics

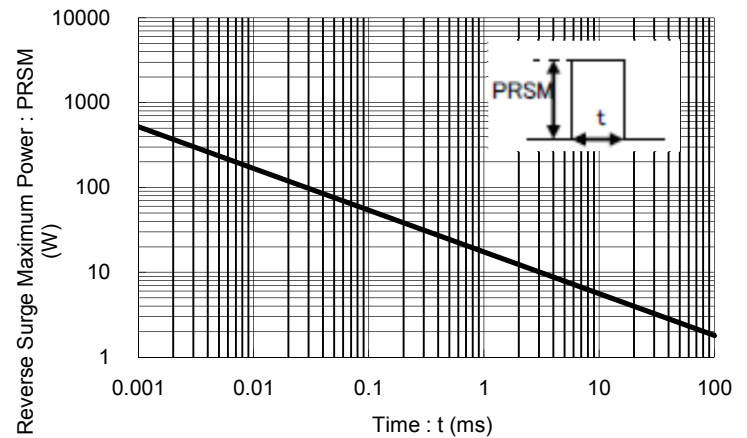


Fig. 4 $r_z - V_Z$ Characteristics

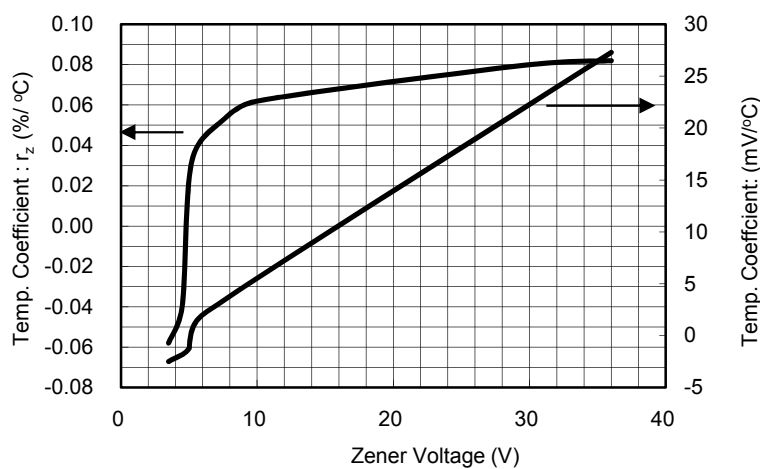
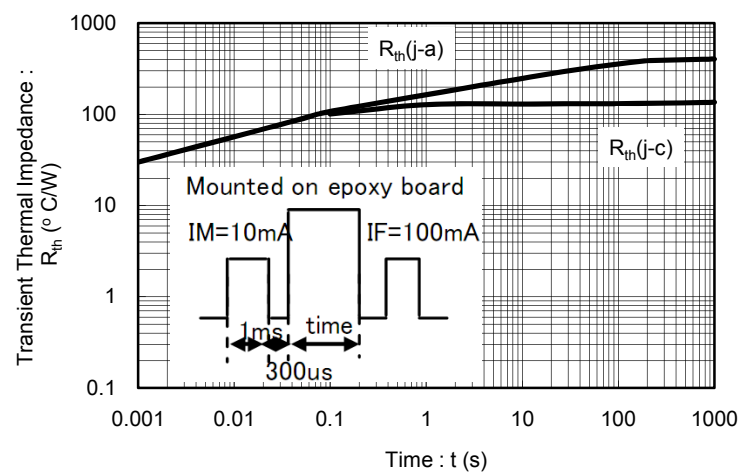


Fig. 5 $R_{th} - t$ Characteristics



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Fig. 6 $V_Z - I_Z$ Characteristics

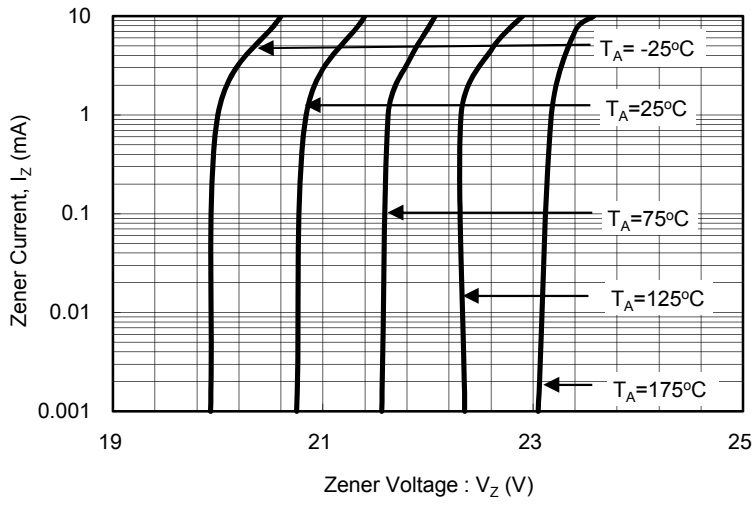


Fig. 7 $V_R - I_R$ Characteristics

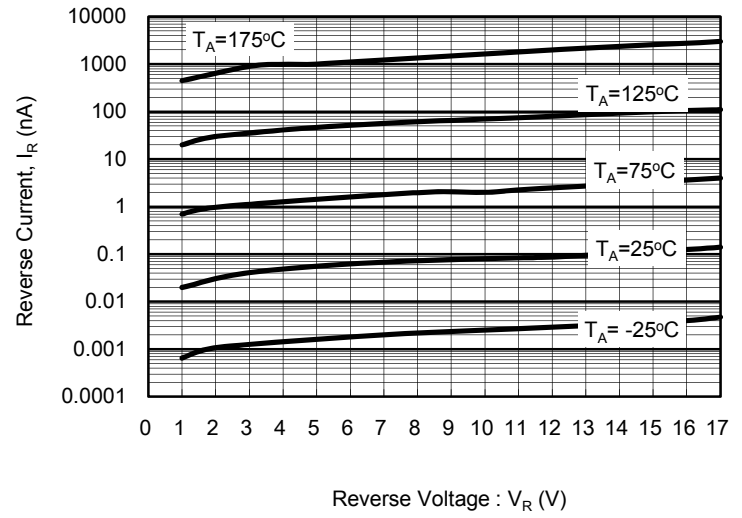


Fig. 8 $V_R - C_t$ Characteristics

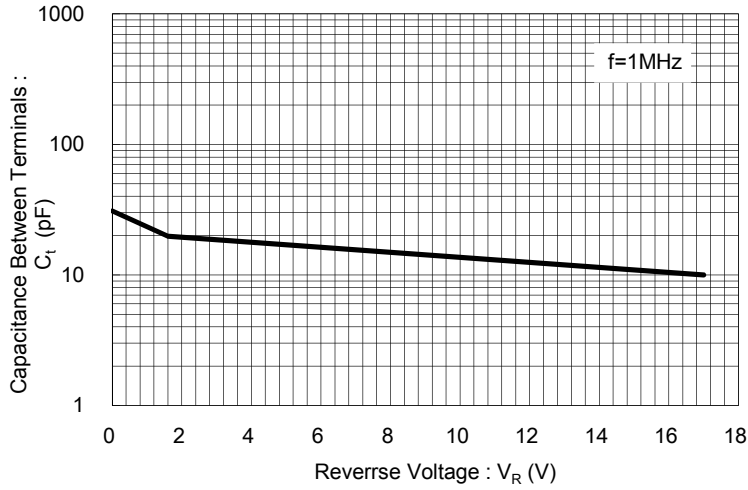
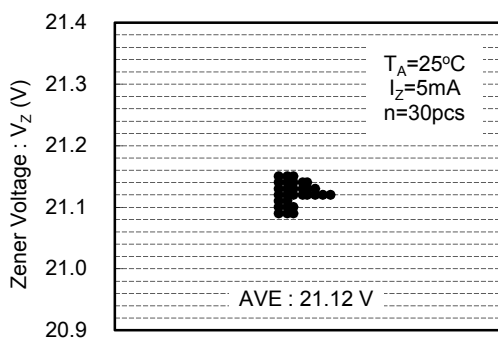
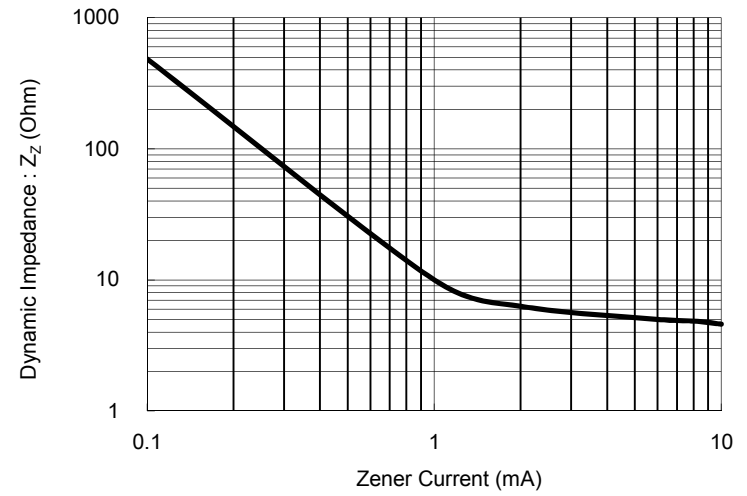
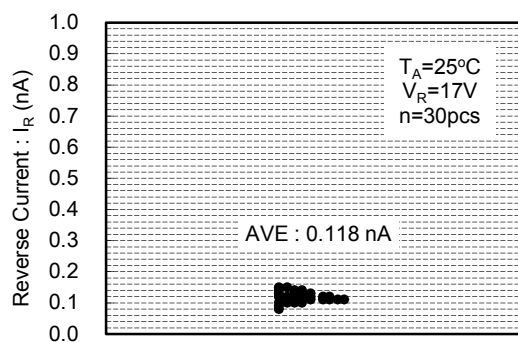


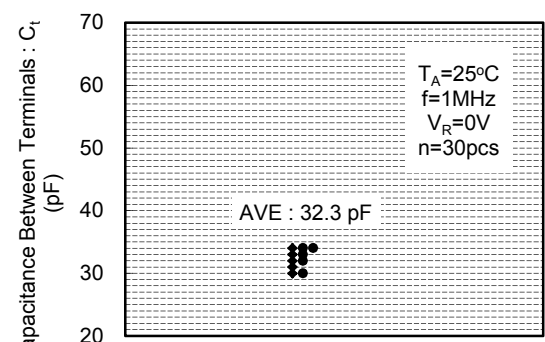
Fig. 9 $Z_Z - I_Z$ Characteristics



V_Z Disersion Map



I_R Disersion Map

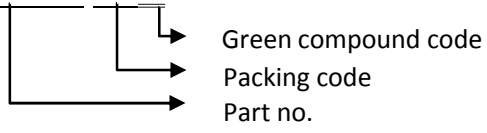


C_t Disersion Map

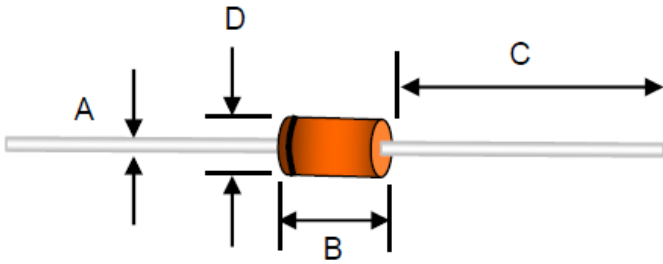
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ORDER INFORMATION (EXAMPLE)

MTZJ39D R0G



PACKAGE OUTLINE DIMENSIONS



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	0.30	0.55	0.012	0.022
B	2.16	3.04	0.085	0.120
C	25.40	38.10	1.000	1.500
D	1.27	2.00	0.050	0.079

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