500mW, 2V - 56V Zener Diode

FEATURES

- Wide Zener voltage range selection: 2V to 56V
- Hermetically sealed glasss
- RoHS Compliant

APPLICATIONS

- Low voltage stabilizers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

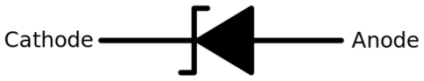
MECHANICAL DATA

- Case: DO-34
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 92.00mg (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_Z	2 - 56	V
Test current I_{ZT}	5	mA
P_D	500	mW
$T_{J\ MAX}$	175	°C
Package	DO-34	
Configuration	Single die	

Pb-Free RoHS COMPLIANT

DO-34



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Power dissipation	P_D	500	mW
Junction temperature range	T_J	-55 to +175	°C
Storage temperature	T_{STG}	-55 to +175	°C

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PART NUMBER		MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
			V_Z @ I_{ZT} (1)			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R	
			V			mA	Ω	Ω	mA	μA	V
			Min	Nom	Max		Max	Max		Max	
MTZJ2V0S	A	2V0A	1.88	1.99	2.10	5	100	1000	0.5	120	0.5
	B	2V0B	2.02	2.11	2.20						
MTZJ2V2S	A	2V2A	2.12	2.21	2.30	5	100	1000	0.5	120	0.7
	B	2V2B	2.22	2.32	2.41						
MTZJ2V4S	A	2V4A	2.33	2.43	2.52	5	100	1000	0.5	120	1.0
	B	2V4B	2.43	2.53	2.63						
MTZJ2V7S	A	2V7A	2.54	2.65	2.75	5	110	1000	0.5	100	1.0
	B	2V7B	2.69	2.80	2.91						
MTZJ3V0S	A	3V0A	2.85	2.96	3.07	5	120	1000	0.5	50	1.0
	B	3V0B	3.01	3.12	3.22						
MTZJ3V3S	A	3V3A	3.16	3.27	3.38	5	120	1000	0.5	20	1.0
	B	3V3B	3.32	3.43	3.53						
MTZJ3V6S	A	3V6A	3.45	3.58	3.695	5	100	1000	1.0	10	1.0
	B	3V6B	3.60	3.72	3.845						
MTZJ3V9S	A	3V9A	3.74	3.88	4.01	5	100	1000	1.0	5	1.0
	B	3V9B	3.89	4.03	4.16						
MTZJ4V3S	A	4V3A	4.04	4.17	4.29	5	100	1000	1.0	5	1.0
	B	4V3B	4.17	4.30	4.43						
	C	4V3C	4.30	4.44	4.57						
MTZJ4V7S	A	4V7A	4.44	4.56	4.68	5	80	900	0.5	5	1.0
	B	4V7B	4.55	4.68	4.80						
	C	4V7C	4.68	4.81	4.93						
MTZJ5V1S	A	5V1A	4.81	4.94	5.07	5	80	1200	0.5	5	1.5
	B	5V1B	4.94	5.07	5.20						
	C	5V1C	5.09	5.23	5.37						
MTZJ5V6S	A	5V6A	5.28	5.42	5.55	5	60	900	0.5	5	2.5
	B	5V6B	5.45	5.59	5.73						
	C	5V6C	5.61	5.76	5.91						
MTZJ6V2S	A	6V2A	5.78	5.94	6.09	5	60	500	0.5	5	3.0
	B	6V2B	5.96	6.12	6.27						
	C	6V2C	6.12	6.28	6.44						
MTZJ6V8S	A	6V8A	6.29	6.46	6.63	5	20	150	0.5	2	3.5
	B	6V8B	6.49	6.66	6.83						
	C	6V8C	6.66	6.84	7.01						
MTZJ7V5S	A	7V5A	6.85	7.04	7.22	5	20	120	0.5	0.5	4.0
	B	7V5B	7.07	7.26	7.45						
	C	7V5C	7.29	7.48	7.67						
MTZJ8V2S	A	8V2A	7.53	7.73	7.92	5	20	120	0.5	0.5	5.0
	B	8V2B	7.78	7.99	8.19						
	C	8V2C	8.03	8.24	8.45						
MTZJ9V1S	A	9V1A	8.29	8.51	8.73	5	25	120	0.5	0.5	6.0
	B	9V1B	8.57	8.79	9.01						
	C	9V1C	8.83	9.07	9.30						
MTZJ10S	A	10A	9.12	9.36	9.59	5	30	120	0.5	0.2	7
	B	10B	9.41	9.66	9.90						
	C	10C	9.70	9.95	10.20						
	D	10D	9.97	10.21	10.44						
MTZJ11S	A	11A	10.18	10.45	10.71	5	30	120	0.5	0.2	8
	B	11B	10.50	10.78	11.05						
	C	11C	10.82	11.10	11.38						
MTZJ12S	A	12A	11.13	11.42	11.71	5	30	110	0.5	0.2	9
	B	12B	11.44	11.74	12.03						
	C	12C	11.74	12.05	12.35						
MTZJ13S	A	13A	12.11	12.43	12.75	5	35	110	0.5	0.2	10
	B	13B	12.55	12.88	13.21						
	C	13C	12.99	13.33	13.66						
MTZJ15S	A	15A	13.44	13.79	14.13	5	40	110	0.5	0.2	11
	B	15B	13.89	14.26	14.62						
	C	15C	14.35	14.72	15.09						
MTZJ16S	A	16A	14.80	15.19	15.57	5	40	150	0.5	0.2	12
	B	16B	15.25	15.65	16.04						
	C	16C	15.69	16.10	16.51						

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PART NUMBER		MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
			V_Z @ I_{ZT}(1)			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}	I_{ZK}	I_R @ V_R	
			V			mA	Ω	Ω	mA	μA	V
			Min	Nom	Max		Max	Max		Max	
MTZJ18S	A	18A	16.22	16.64	17.06	5	45	150	0.5	0.2	13
	B	18B	16.82	17.26	17.70						
	C	18C	17.42	17.88	18.33						
MTZJ20S	A	20A	18.02	18.49	18.96	5	55	200	0.5	0.2	15
	B	20B	18.63	19.11	19.59						
	C	20C	19.23	19.73	20.22						
	D	20D	19.72	20.22	20.72						
MTZJ22S	A	22A	20.15	20.68	21.2	5	30	200	0.5	0.2	17
	B	22B	20.64	21.18	21.71						
	C	22C	21.08	21.63	22.17						
	D	22D	21.52	22.08	22.63						
MTZJ24S	A	24A	22.05	22.62	23.18	5	35	200	0.5	0.2	19
	B	24B	22.61	23.19	23.77						
	C	24C	23.12	23.72	24.31						
	D	24D	23.63	24.24	24.85						
MTZJ27S	A	27A	24.26	24.89	25.52	5	45	250	0.5	0.2	21
	B	27B	24.97	25.62	26.26						
	C	27C	25.63	26.29	26.95						
	D	27D	26.29	26.97	27.64						
MTZJ30S	A	30A	26.99	27.69	28.39	5	55	250	0.5	0.2	23
	B	30B	27.70	28.42	29.13						
	C	30C	28.36	29.09	29.82						
	D	30D	29.02	29.77	30.51						
MTZJ33S	A	33A	29.68	30.45	31.22	5	65	250	0.5	0.2	25
	B	33B	30.32	31.10	31.88						
	C	33C	30.90	31.70	32.50						
	D	33D	31.49	32.30	33.11						
MTZJ36S	A	36A	32.14	32.97	33.79	5	75	250	0.5	0.2	27
	B	36B	32.79	33.64	34.49						
	C	36C	33.40	34.27	35.13						
	D	36D	34.01	34.89	35.77						
MTZJ39S	A	39A	34.68	35.58	36.47	5	85	250	0.5	0.2	30
	B	39B	35.36	36.28	37.19						
	C	39C	36.00	36.93	37.85						
	D	39D	36.63	37.58	38.52						
	E	39E	37.36	38.33	39.29						
	F	39F	38.14	39.13	40.11						
	G	39G	38.94	39.87	40.80						
MTZJ43S	-	43S	40.00	42.50	45.00	5	90	250	0.5	0.2	33
MTZJ47S	-	47S	44.00	46.50	49.00		90	250	0.5	0.2	36
MTZJ51S	-	51S	48.00	51.00	54.00		110	250	0.5	0.2	39
MTZJ56S	-	56S	53.00	56.50	60.00		110	250	0.5	0.2	43

Notes:

1. The Zener voltage subdivision (V_Z) is measured 30ms 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, D, E, F, G

ORDERING INFORMATION		
ORDERING CODE[1][2]	**PACKAGE**	**PACKING**
MTZJxSx R0	DO-34	10,000 / 14" Reel
MTZJxSx A0	DO-34	5,000 / Ammo Box
MTZJxSx R0G	DO-34	10,000 / 14" Reel
MTZJxSx A0G	DO-34	5,000 / Ammo Box

Notes:

1. "x" defines voltage from 2V (MTZJ2V0SA) to 56V (MTZJ56S)
2. Above ordering codes A0/A0G/R0/R0G refer to physically identical parts without any differences

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 V_Z - I_Z Characteristics

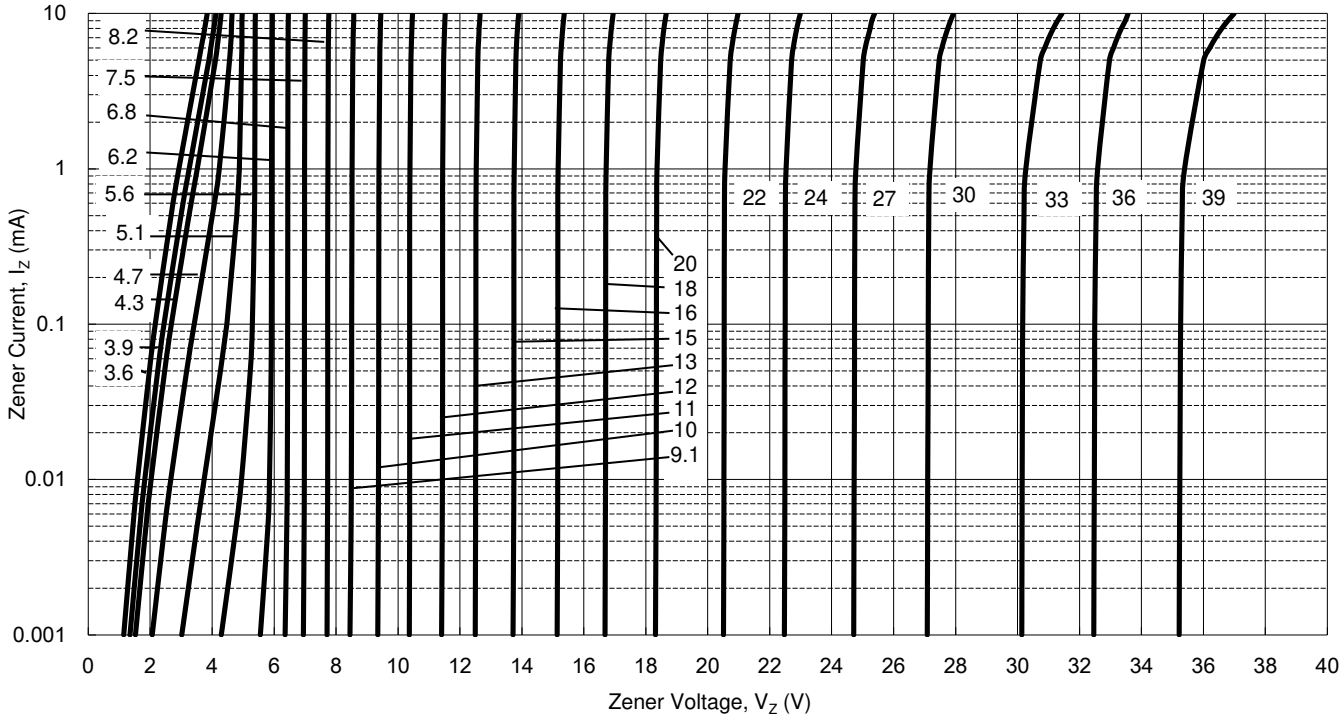


Fig.2 P_D - T_A Characteristics

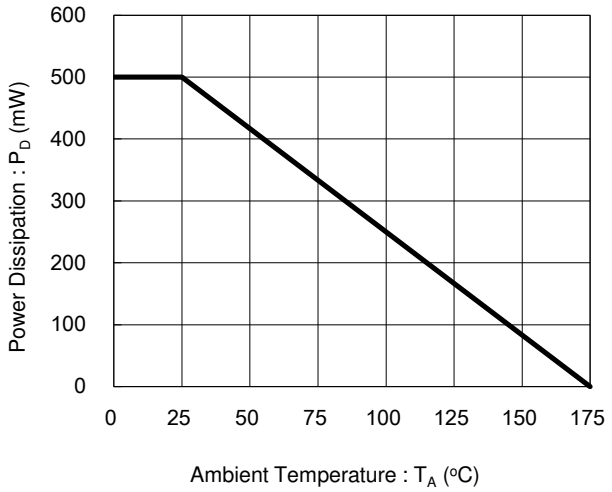
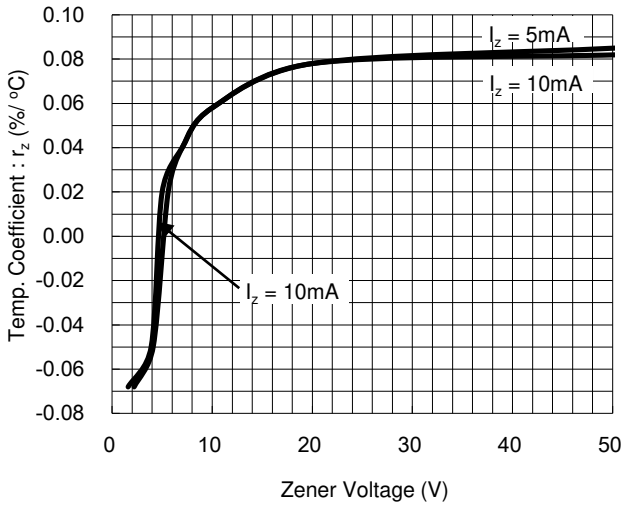
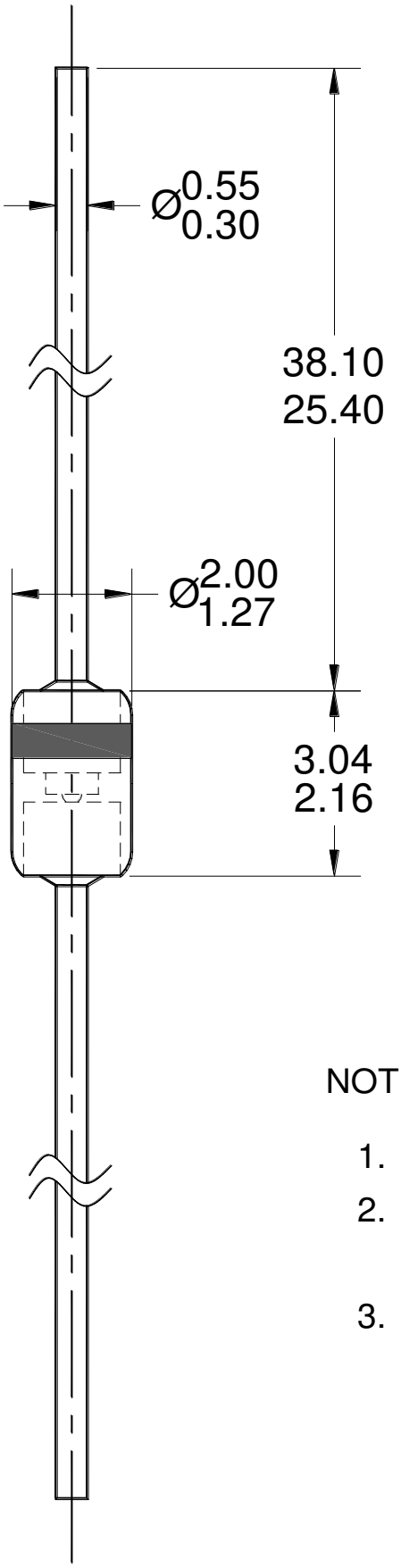


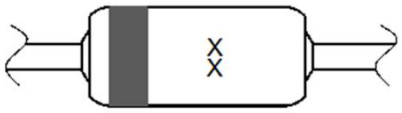
Fig.3 r_z - V_Z Characteristics



PACKAGE OUTLINE DIMENSIONS

DO-34





XX = MARKING CODE

MARKING DIAGRAM

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-DO34-057 REV A.

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