

500mW 2% Zener Diodes

FEATURES

- Wide zener voltage range selection: 2.0V to 75V
- VZ Tolerance Selection of $\pm 2\%$
- Hermetically sealed glass
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

MECHANICAL DATA

- Case: DO-34
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal :Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 109 ± 4 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_Z	2.0-75	V
Test current I_{ZT}	5	mA
P_{tot}	500	mW
T_J MAX	175	$^{\circ}\text{C}$
Package	DO-34	
Configuration	Single dice	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	PART NUMBER	UNIT
Total power dissipation	P_{tot}	500	mW
Junction temperature range	T_J	-55 to +175	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-55 to +175	$^{\circ}\text{C}$

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

PART NUMBER		MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
			$V_Z @ I_{ZT}$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$IR @ VR$	
			V			mA	Ω	Ω	mA	μA	V
			Min.	Nom.	Max.		Max.		Min.	Nom.	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	1,200	0.5	5.0	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	5.0	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	5.0	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	2.0	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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PART NUMBER		MARKING CODE	ZENER VOLTAGE			TEST CURRENT	REGULAR IMPEDANCE		TEST CURRENT	LEAKAGE CURRENT	
			$V_Z @ I_{ZT}$			I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	IR @ VR	
			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 (VZ) is measured 40ms after diode is powered up
2. The operating resistance (ZZT or ZZK) is measured by superimposing a minute alternation current in the regulated current (IZ)
3. When ordering, please specify tolerance A, B, C, D, E, F, G

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
MTZJxxxSx (Note 1&2)	R0	G	DO-34	10K / 14" Reel
	A0			5K / Box (Ammo)

Notes:

1. "xxxSx" is device code from "2V0SA" to "56S"

*: optional available

EXAMPLE				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
MTZJ2V0SA R0G	MTZJ2V0SA	R0	G	Green compound

CHARACTERISTICS CURVES

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

Fig.1 $V_Z - I_Z$ Characteristics

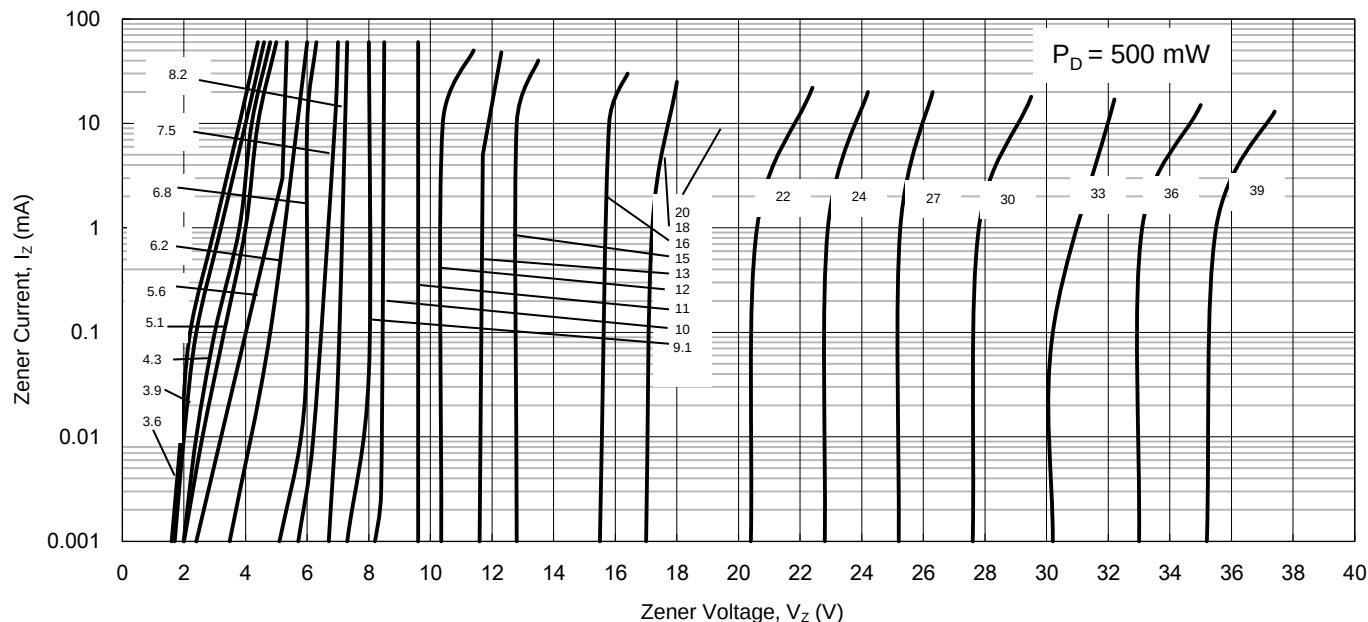


Fig.2 $P_D - T_A$ Characteristics

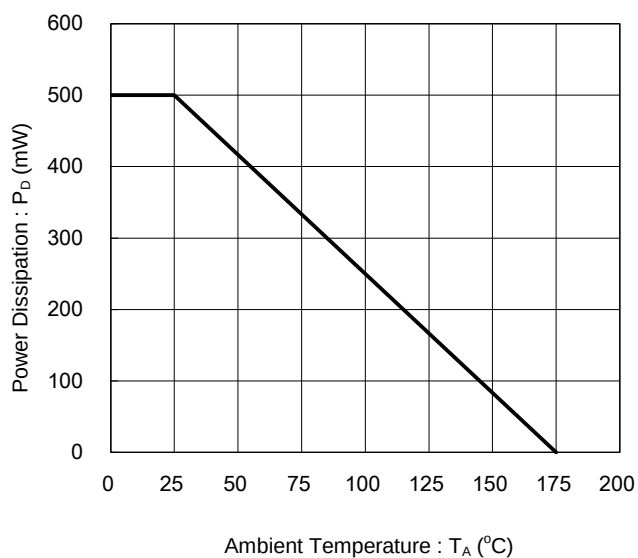
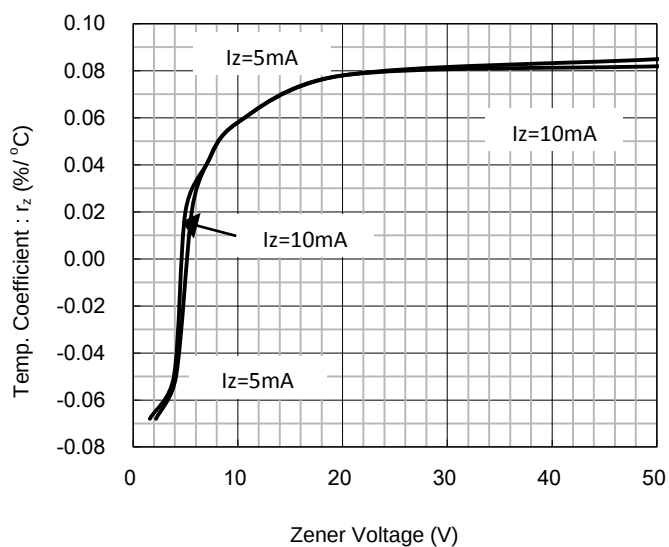
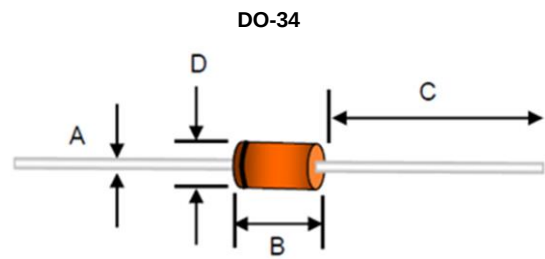


Fig.2 $r_z - V_Z$ Characteristics



PACKAGE OUTLINE DIMENSION



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

MARKING DIAGRAM



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