

500mW, 2V-56V Zener Diodes

FEATURES

- Wide zener voltage range selection: 2.0V to 56V
- Hermetically sealed glass
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC

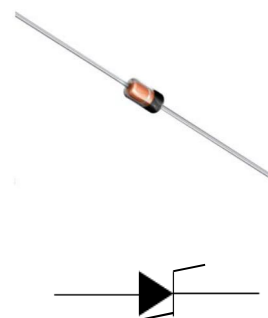
APPLICATIONS

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

MECHANICAL DATA

- Case: DO-34
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 92 mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_Z	2.0 - 56	V
Test current I_{ZT}	5	mA
P_D	500	mW
T_J MAX	175	°C
Package	DO-34	
Configuration	Single die	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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 ($T_A = 25^\circ\text{C}$ 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}	$I_R @ V_R$	
			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						
MTZJ13S	A	13A	11.74	12.05	12.35	5	35	110	0.5	0.2	10
	B	13B	12.11	12.43	12.75						
	C	13C	12.55	12.88	13.21						
MTZJ15S	A	15A	12.99	13.33	13.66	5	40	110	0.5	0.2	11
	B	15B	13.44	13.79	14.13						
	C	15C	13.89	14.26	14.62						
MTZJ16S	A	16A	14.35	14.72	15.09	5	40	150	0.5	0.2	12
	B	16B	14.80	15.19	15.57						
	C	16C	15.25	15.65	16.04						
	A	16A	15.69	16.10	16.51						
	B	16B									

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}	$I_R @ V_R$	
			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						
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						
MTZJ24S	A	24A	21.52	22.08	22.63	5	35	200	0.5	0.2	19
	B	24B	22.05	22.62	23.18						
	C	24C	22.61	23.19	23.77						
MTZJ27S	A	27A	23.12	23.72	24.31	5	45	250	0.5	0.2	21
	B	27B	23.63	24.24	24.85						
	C	27C	24.26	24.89	25.52						
MTZJ30S	A	30A	24.97	25.62	26.26	5	55	250	0.5	0.2	23
	B	30B	25.63	26.29	26.95						
	C	30C	26.29	26.97	27.64						
MTZJ33S	A	33A	26.99	27.69	28.39	5	65	250	0.5	0.2	25
	B	33B	27.70	28.42	29.13						
	C	33C	28.36	29.09	29.82						
MTZJ36S	A	36A	29.02	29.77	30.51	5	75	250	0.5	0.2	27
	B	36B	29.68	30.45	31.22						
	C	36C	30.32	31.10	31.88						
MTZJ39S	A	39A	30.90	31.70	32.50	5	85	250	0.5	0.2	30
	B	39B	31.49	32.30	33.11						
	C	39C	32.14	32.97	33.79						
MTZJ43S	A	43A	32.79	33.64	34.49	5	90	250	0.5	0.2	33
	B	43B	33.40	34.27	35.13						
	C	43C	34.01	34.89	35.77						
MTZJ47S	A	47A	34.68	35.58	36.47	5	90	250	0.5	0.2	36
	B	47B	35.36	36.28	37.19						
	C	47C	36.00	36.93	37.85						
MTZJ51S	A	51A	36.63	37.58	38.52	5	110	250	0.5	0.2	39
	B	51B	37.36	38.33	39.29						
	C	51C	38.14	39.13	40.11						
MTZJ56S	A	56A	38.94	39.87	40.80	5	110	250	0.5	0.2	43
	B	56B	40.00	42.50	45.00						
	C	56C	44.00	46.50	49.00						

Notes:

- The zener voltage subdivision (V_Z) is measured 30ms after diode is powered up
- The operating resistance (Z_{ZT} or Z_{ZK}) is measured by superimposing a minute alternation current in the regulated current (I_Z)
- When ordering, please specify tolerance A, B, C, D, E, F, G

ORDERING INFORMATION

ORDERING CODE (Note 1, 2)	PACKAGE	PACKING
MTZJxxxSx R0	DO-34	10K / 14" Reel
MTZJxxxSx R0G	DO-34	10K / 14" Reel
MTZJxxxSx A0	DO-34	5K / Box (Ammo)
MTZJxxxSx A0G	DO-34	5K / Box (Ammo)

Note:

1. "xxx" defines voltage from 2.0V (MTZJ2V0SA) to 56V (MTZJ56S)
2. "G" means green compound (Halogen free)

CHARACTERISTICS CURVES

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

Fig. 1 $V_Z - I_Z$ Characteristics

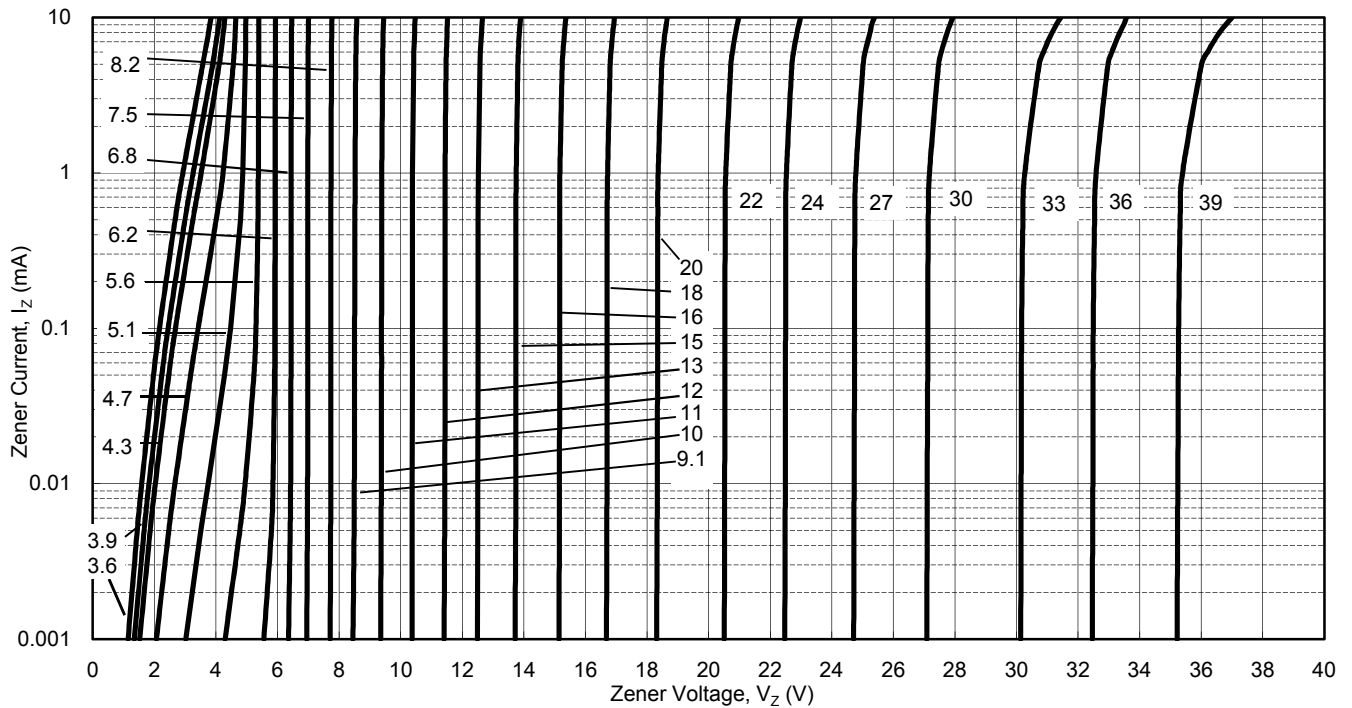


Fig. 2 $P_D - T_A$ Characteristics

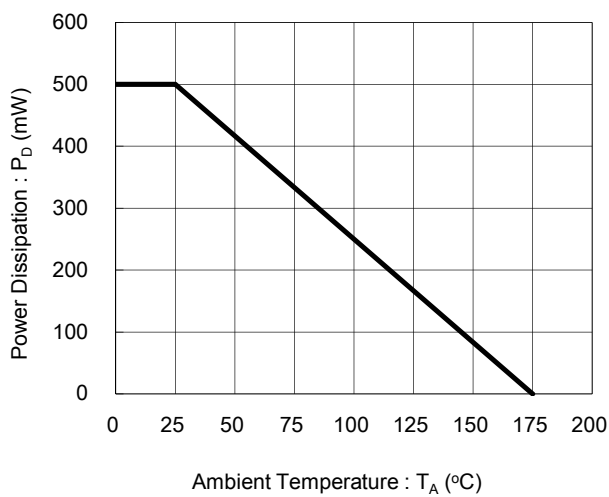
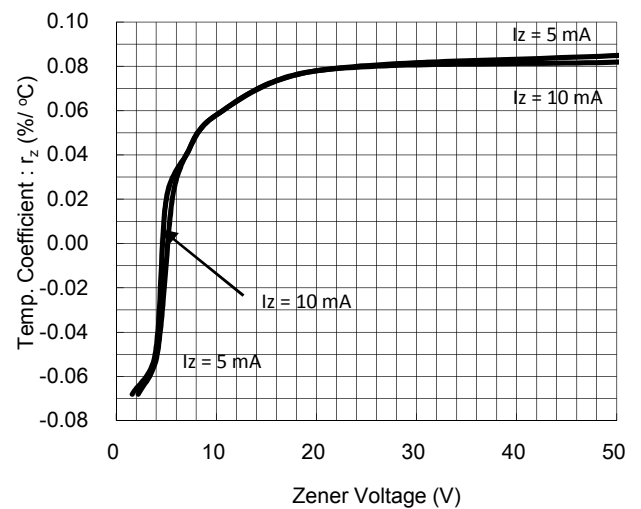
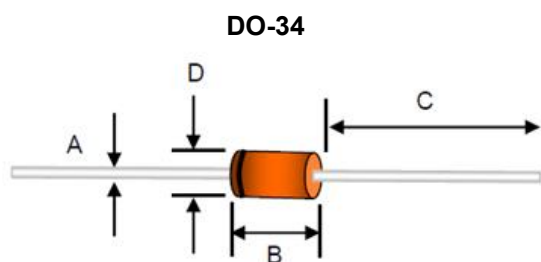


Fig. 3 $r_z - V_Z$ Characteristics



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



xxx = Marking code

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Taiwan Semiconductor:

[MTZJ7V5A R0G](#) [MTZJ18B R0G](#) [MTZJ11B R0G](#)