500mW, 2V-56V Zener Diodes

FEATURES

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

APPLICATIONS

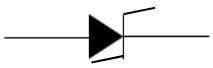
- Low voltage stabilizers or voltage references
- Adapters
- Lighting application
- On-board DC/DC converter

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	

Pb-Free RoHS COMPLIANT



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}			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}			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 (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°C unless otherwise noted)

Fig. 1 V_Z - I_Z Characteristics

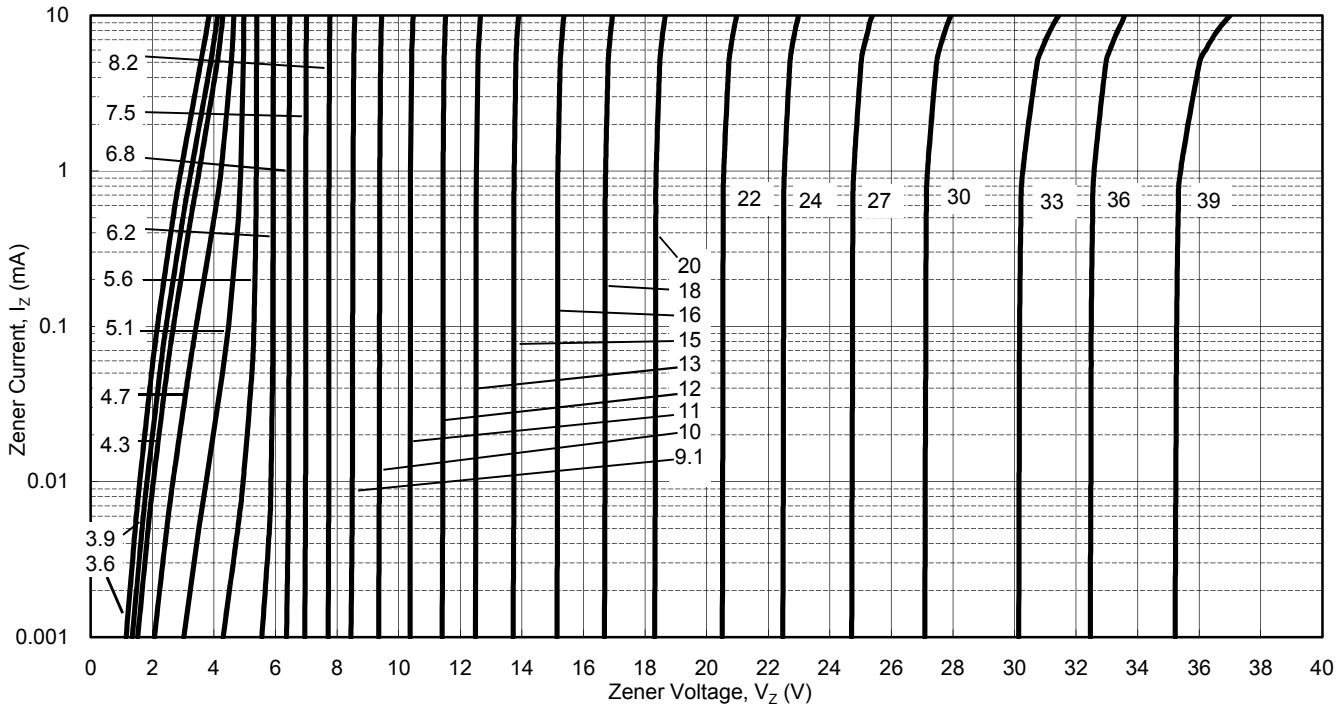


Fig. 2 P_D - T_A Characteristics

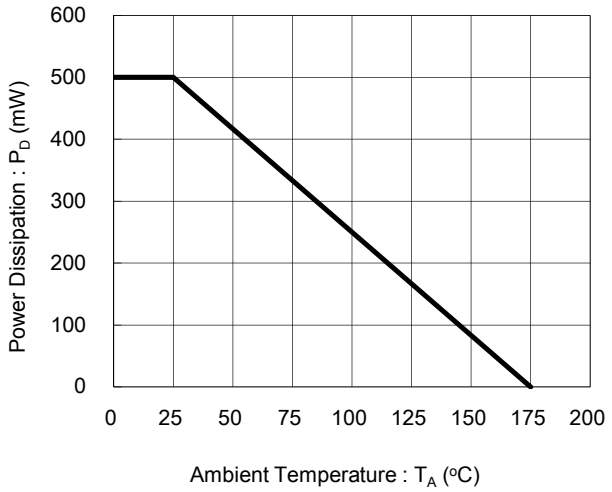
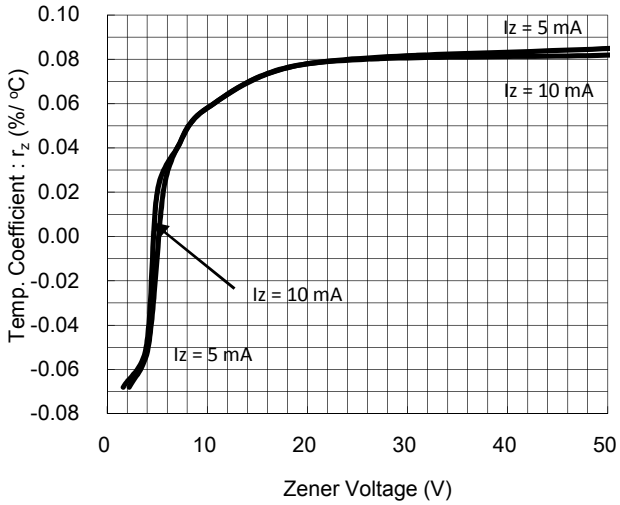
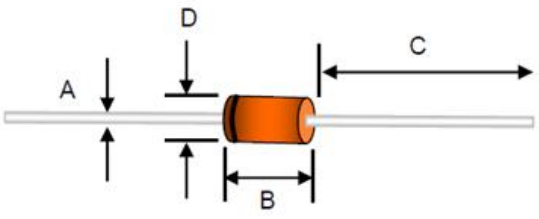


Fig. 3 r_z - V_Z Characteristics



PACKAGE OUTLINE DIMENSION

DO-34



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:

MTZJ9V1SC R0G MTZJ4V7SA R0G MTZJ12SC R0G MTZJ13SB R0G MTZJ10SB R0G MTZJ39SF R0G MTZJ6V2SB R0G MTZJ47S R0G MTZJ2V2SB R0G MTZJ4V7SB R0G MTZJ4V7SA R0 MTZJ12SC R0 MTZJ13SA R0G MTZJ36SC R0 MTZJ4V7SC R0 MTZJ33SA R0 MTZJ33SB R0 MTZJ5V1SC R0G MTZJ13SA R0 MTZJ22SC R0G MTZJ4V3SC R0G MTZJ10SA R0 MTZJ13SC R0 MTZJ2V2SA R0 MTZJ11SB R0G MTZJ15SA R0G MTZJ22SD R0 MTZJ7V5SB R0 MTZJ36SC R0G MTZJ2V0SA R0 MTZJ4V3SB R0G MTZJ6V8SA R0G MTZJ5V6SB R0G MTZJ2V4SB R0 MTZJ33SD R0 MTZJ3V3SB R0G MTZJ30SB R0 MTZJ24SD R0 MTZJ7V5SC R0G MTZJ2V4SB R0G MTZJ30SD R0 MTZJ3V6SA R0 MTZJ27SB R0 MTZJ56S R0 MTZJ24SB R0G MTZJ39SE R0 MTZJ2V0SB R0G MTZJ33SB R0G MTZJ36SD R0 MTZJ5V1SA R0G MTZJ12SA R0 MTZJ27SC R0 MTZJ6V8SC R0 MTZJ39SE R0G MTZJ16SA R0 MTZJ20SA R0G MTZJ27SA R0G MTZJ39SA R0 MTZJ3V6SB R0G MTZJ18SA R0 MTZJ33SC R0G MTZJ3V3SB R0 MTZJ36SA R0G MTZJ6V2SC R0G MTZJ7V5SA R0 MTZJ18SC R0G MTZJ22SB R0 MTZJ39SD R0 MTZJ13SC R0G MTZJ9V1SC R0 MTZJ24SA R0 MTZJ11SA R0 MTZJ9V1SB R0G MTZJ3V0SB R0 MTZJ2V7SB R0G MTZJ4V3SB R0 MTZJ20SA R0 MTZJ30SC R0 MTZJ51S R0G MTZJ10SD R0G MTZJ10SD R0 MTZJ3V3SA R0G MTZJ3V9SB R0G MTZJ36SA R0 MTZJ9V1SB R0 MTZJ22SB R0G MTZJ2V0SA R0G MTZJ39SC R0 MTZJ8V2SC R0G MTZJ10SA R0G MTZJ5V6SA R0 MTZJ3V0SA R0 MTZJ22SA R0 MTZJ15SA R0 MTZJ12SB R0G MTZJ5V6SC R0 MTZJ6V8SB R0 MTZJ5V6SC R0G MTZJ2V2SB R0 MTZJ10SB R0