



ZENER DIODE

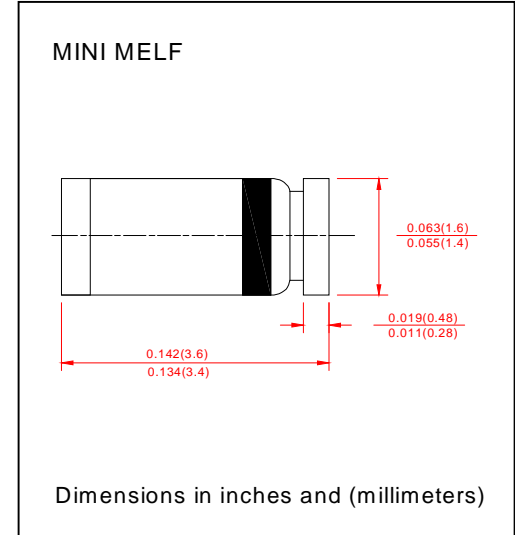
MZ0.5GN SERIES

MZ0.5GE2V0-20 THRU MZ0.5GE75V-1.7
MZ0.5GE2V THRU MZ0.5GE75V

TECHHICAL SPECIFICATION

FEATURES

- Silicon Planar Power Zener Diodes
- The zener voltages are graded according to the International E24 standard smaller voltage smaller Voltage tolerances and other zener voltages are Available upon request.
- High Reliability
- MINI-MELF glass case(SOD-80)
- Weight: Approx. 0.05g



ABSOLUTE MAXIMUM RATINGS: (Ta=25°C)

Parameter	Symbols	Limits	Unit
Power Dissipation at T _{amb} =75°C	P _{tot}	500 ⁽¹⁾	mw
Maximum Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55~+150	°C

	Symbols	Min	Typ	Max	Unit
Thermal Resistance Junction to Ambient Air	R _{thJA}	-	-	300 ⁽¹⁾	°C/W
Forward Voltage at I _F =100mA	V _F	-	-	1.2	Volts

Notes

1. Valid provided that electrodes are kept at ambient temperature.
2. Tested with pulse t_p=5ms.
3. At I_z = 2.5mA
4. At I_z = 0.125mA.



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ELECTRICAL CHARACTERISTIC

Ratings at 25°C ambient temperature unless otherwise specified

Type	Device Marking Code	Zener Voltage ⁽²⁾ V _{Z(V)} ($\Delta V_Z \leq \pm 5\%$) ⁽⁴⁾		Dynamic Resistance		Temp coeff of Zener Volotage αV_Z (%/k)	Reverse leakage current I _R (M _A)		Admissible Zener Current ⁽³⁾ I _{ZT} (M _A)
				f=1KHz Z _{ZT} (Ω) At I _{ZT}	f=1KHZ I _{ZK} =0.25Ma Z _{ZK} (Ω)		MA X	V _R (V A)	
			at I _Z (mA)	MAX	MIN				MAX
MZO.5GN2V0-20	2V0-20	2.0	20	38	1500		150	0.5	205
MZO.5GN2V2-20	2V2-20	2.2	20	35	1500		150	0.5	192
MZO.5GN2V4-20	2V4-20	2.4	20	32	1200		100	0.7	189
MZO.5GN2V7-20	2V7-20	2.7	20	30	1300	-0.08...-0.06	75	0.7	165
MZO.5GN3V0-20	3V0-20	3.0	20	29	1600	-0.08...-0.06	50	1	152
MZO.5GN3V3-20	3V3-20	3.3	20	28	1600	-0.08...-0.05	25	1	138
MZO.5GN3V6-20	3V6-20	3.6	20	24	1700	-0.08...-0.04	15	1	126
MZO.5GN3V9-20	3V9-20	3.9	20	23	1900	-0.07...-0.03	10	1	115
MZO.5GN4V3-20	4V3-20	4.3	20	22	2000	-0.04...-0.01	5	1	106
MZO.5GN4V7-20	4V7-20	4.7	20	19	1900	-0.03...-0.01	5	2	97
MZO.5GN5V1-20	5V1-20	5.1	20	17	1600	-0.02...-0.05	5	2	89
MZO.5GN5V6-20	5V6-20	5.6	20	11	1600	-0.01...-0.06	5	3	81
MZO.5GN6V0-20	6V0-20	6.0	20	7	1600	-0.01...-0.07	5	3.5	76
MZO.5GN6V2-20	6V2-20	6.2	20	7	1000	-0...-0.07	5	4	73
MZO.5GN6V8-20	6V8-20	6.8	20	5	750	+0.01...+0.08	3	5	67
MZO.5GN7V5-20	7V5-20	7.5	20	6	500	+0.01...+0.09	3	6	61
MZO.5GN8V2-20	8V2-20	8.2	20	8	500	+0.01...+0.09	3	6.5	55
MZO.5GN8V7-20	8V7-20	8.7	20	8	600	+0.01...+0.10	3	6.5	52
MZO.5GN9V1-20	9V1-20	9.1	20	10	600	+0.02...+0.10	3	7	50
MZO.5GN10V-20	10V-20	10	20	17	600	+0.03...+0.11	3	8	45
MZO.5GN11V-20	11V-20	11	20	22	600	+0.03...+0.11	2	8.4	41
MZO.5GN12V-20	12V-20	12	20	30	600	+0.03...+0.11	1	9.1	38
MZO.5GN13V-9.5	13V-9.5	13	9.5	13	600	+0.03...+0.11	0.5	9.9	35
MZO.5GN14V-9.0	14V-9.0	14	9	15	600	+0.03...+0.11	0.5	10	32
MZO.5GN15V-8.5	15V-8.5	15	8.5	16	600	+0.03...+0.11	0.1	11	30
MZO.5GN16V-7.8	16V-7.8	16	7.8	17	600	+0.03...+0.11	0.1	12	28
MZO.5GN17V-7.4	17V-7.4	17	7.4	19	600	+0.03...+0.11	0.1	13	27
MZO.5GN18V-7.0	18V-7.0	18	7	21	600	+0.03...+0.11	0.1	14	25
MZO.5GN19V-6.6	19V-6.6	19	6.6	23	600	+0.03...+0.11	0.1	14	24
MZO.5GN20V-6.2	20V-6.2	20	6.2	25	600	+0.03...+0.11	0.1	15	23
MZO.5GN22V-5.6	22V-5.6	22	5.6	29	600	+0.03...+0.11	0.1	17	21
MZO.5GN24V-5.2	24V-5.2	24	5.2	33	600	+0.04...+0.12	0.1	18	19.1
MZO.5GN25V-5.0	25V-5.0	25	5	35	600	+0.03...+0.12	0.1	19	18.2
MZO.5GN27V-4.6	27V-4.6	27	4.6	41	600	+0.04...+0.12	0.1	21	16.8
MZO.5GN28V-4.5	28V-4.5	28	4.5	44	600	+0.03...+0.12	0.1	21	16.2
MZO.5GN30V-4.2	30V-4.2	30	4.2	49	600	+0.04...+0.12	0.1	23	15.1
MZO.5GN33V-3.8	33V-3.8	33	3.8	58	700	+0.04...+0.12	0.1	25	13.8
MZO.5GN36V-3.4	36V-3.4	36	3.4	70	700	+0.04...+0.12	0.1	27	12.6
MZO.5GN39V-3.2	39V-3.2	39	3.2	80	800	+0.04...+0.12	0.1	30	11.6
MZO.5GN43V-3	43V-3	43	3	93	900	+0.04...+0.13	0.1	33	10.6
MZO.5GN47V-2.7	47V-2.7	47	2.7	105	1000	+0.05...+0.13	0.1	36	9.7
MZO.5GN51V-2.5	51V-2.5	51	2.5	125	1100	+0.05...+0.14	0.1	39	8.9
MZO.5GN56V-2.2	56V-2.2	56	2.2	150	1300	+0.05...+0.14	0.1	43	-
MZO.5GN60V-2.1	60V-2.1	60	2.1	170	1400	+0.05...+0.15	0.1	46	-
MZO.5GN62V-2.0	62V-2.0	62	2	185	1500	+0.05...+0.15	0.1	47	-
MZO.5GN68V-1.8	68V-1.8	68	1.8	230	1600	+0.05...+0.15	0.1	52	-
MZO.5GN75V-1.7	75V-1.7	75	1.7	270	1700	+0.05...+0.15	0.1	56	-



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Ratings at 25°C ambient temperature unless otherwise specified

Type	Device Marking Code	Zener Voltage ⁽²⁾ V _{Z(V)} ($\Delta V_Z \leq \pm 5\%$) ⁽⁴⁾	Dynamic Resistance		Temp coeff of Zener Volotage $\alpha V_Z(\%/k)$	Reverse leakage current I _{R(Ma)}		Admissible Zener Current ⁽³⁾ I _{ZT(Ma)}
			f=1KHz Z _{ZT} (Ω) At I _{ZT}	f=1KHZ I _{ZK} =0.25Ma Z _{ZK} (Ω)		M A	V _{R(V)} A	
			MAX	MIN				
MZ0.5GN2V0	2V0	2.0	100	2000		15	0.5	150
MZ0.5GN2V2	2V2	2.2	100	2000		15	0.5	145
MZ0.5GN2V4	2V4	2.4	100	1800		10	0.7	140
MZ0.5GN2V7	2V7	2.7	100	1900	-0.08...-0.06	75	0.7	135
MZ0.5GN3V0	3V0	3.0	95	2000	-0.08...-0.06	50	1	125
MZ0.5GN3V3	3V3	3.3	95	2200	-0.08...-0.05	25	1	115
MZ0.5GN3V6	3V6	3.6	90	2300	-0.08...-0.04	15	1	105
MZ0.5GN3V9	3V9	3.9	90	2400	-0.07...-0.03	10	1	95
MZ0.5GN4V3	4V3	4.3	88	2500	-0.04...-0.01	5	1	90
MZ0.5GN4V7	4V7	4.7	70	2200	-0.03...-0.01	3	1.5	85
MZ0.5GN5V1	5V1	5.1	50	2050	-0.02...-0.05	2	2	80
MZ0.5GN5V6	5V6	5.6	25	1800	-0.01...-0.06	2	3	70
MZ0.5GN6V2	6V2	6.2	10	1300	0...0.07	1	4	64
MZ0.5GN6V8	6V8	6.8	8	750	+0.01...+0.08	1	5.2	58
MZ0.5GN7V5	7V5	7.5	7	600	+0.01...+0.09	0.5	6	53
MZ0.5GN8V2	8V2	8.2	7	600	+0.01...+0.09	0.5	6.4	47
MZ0.5GN9V1	9V1	9.1	10	600	+0.02...+0.10	0.1	7	43
MZ0.5GN10V	10V	10	15	600	+0.03...+0.11	0.1	8	40
MZ0.5GN11V	11V	11	18	600	+0.03...+0.11	0.1	8.1	36
MZ0.5GN12V	12V	12	22	600	+0.03...+0.11	0.1	9.1	32
MZ0.5GN13V	13V	13	25	600	+0.03...+0.11	0.1	9.9	29
MZ0.5GN15V	15V	15	32	600	+0.03...+0.11	0.1	11	27
MZ0.5GN16V	16V	16	36	600	+0.03...+0.11	0.1	12	24
MZ0.5GN18V	18V	18	42	600	+0.03...+0.11	0.1	14	21
MZ0.5GN20V	20V	20	48	600	+0.03...+0.11	0.1	15	20
MZ0.5GN22V	22V	22	55	600	+0.03...+0.11	0.1	17	18
MZ0.5GN24V	24V	24	62	600	+0.04...+0.12	0.1	18	16
MZ0.5GN27V	27V	27	70	600	+0.04...+0.12	0.1	21	14
MZ0.5GN30V	30V	30	78	600	+0.04...+0.12	0.1	23	13
MZ0.5GN33V	33V	33	88	700	+0.04...+0.12	0.1	25	12
MZ0.5GN36V	36V	36	95	700	+0.04...+0.12	0.1	27	11
MZ0.5GN39V	39V	39	130	800	+0.04...+0.12	0.1	30	10
MZ0.5GN43V	43V	43	130	900	+0.04...+0.13	0.1	33	10.6
MZ0.5GN47V	47V	47	130	1000	+0.05...+0.13	0.1	36	9.7
MZ0.5GN51V	51V	51	140	1100	+0.05...+0.14	0.1	39	8.9
MZ0.5GN56V	56V	56	160 ⁽⁵⁾	1300 ⁽⁶⁾	+0.05...+0.14 ⁽⁵⁾	0.1	43	
MZ0.5GN60V	60V	60	180 ⁽⁵⁾	1400 ⁽⁶⁾	+0.05...+0.15 ⁽⁵⁾	0.1	46	
MZ0.5GN62V	62V	62	210 ⁽⁵⁾	1500 ⁽⁶⁾	+0.05...+0.15 ⁽⁵⁾	0.1	47	
MZ0.5GN68V	68V	68	240 ⁽⁵⁾	1600 ⁽⁶⁾	+0.05...+0.15 ⁽⁵⁾	0.1	52	
MZ0.5GN75V	75V	75	280 ⁽⁵⁾	1700 ⁽⁶⁾	+0.05...+0.15 ⁽⁵⁾	0.1	56	



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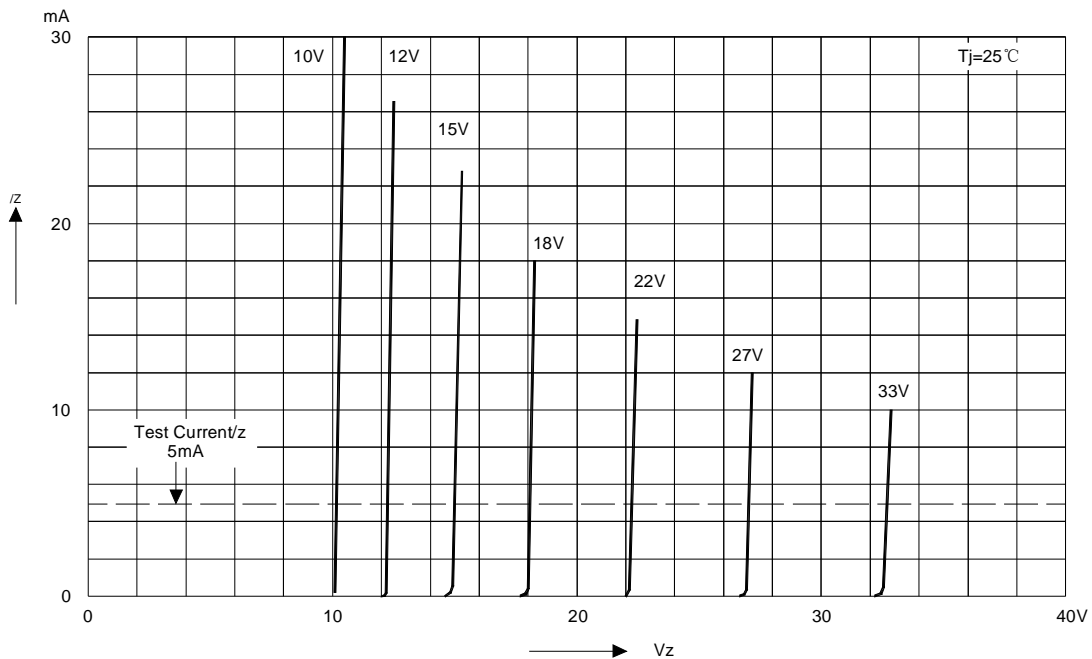
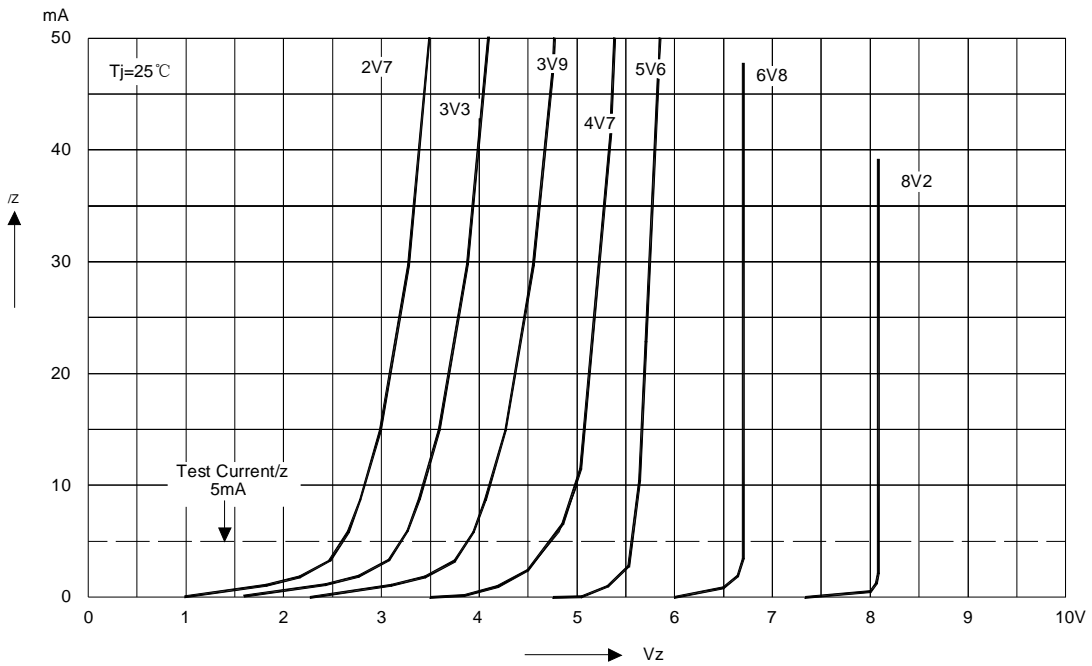
MZ0.5GE2V0-20 THRU MZ0.5GE75V-1.7

MZ0.5GE2V THRU MZ0.5GE75V

RATINGS AND CHARACTERISTIC CURVES

Breakdown characteristics

$T_j = \text{constant (pulsed)}$





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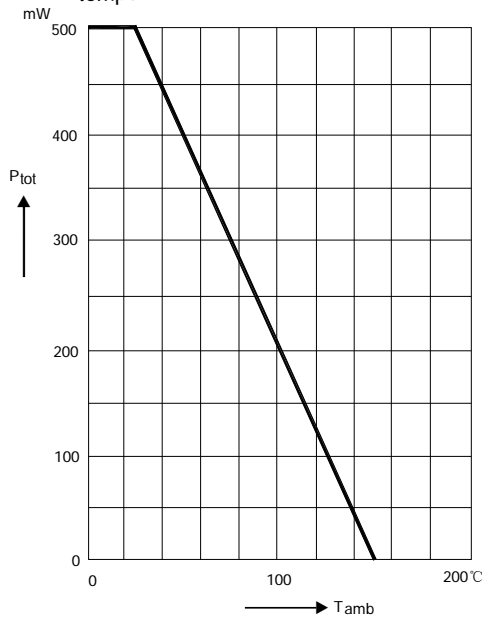
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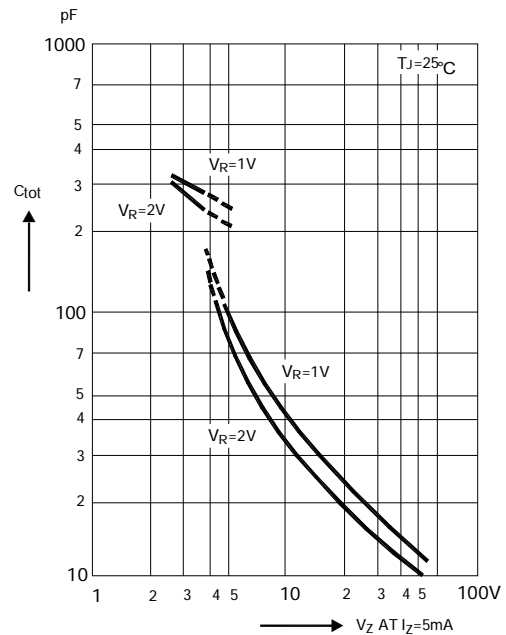
MZ0.5GE2V THRU MZ0.5GE75V

RATINGS AND CHARACTERISTIC CURVES

Admissible power dissipation
versus ambient temperature
Valid provided that leads are kept ambient
temperature at a distance of 8mm from case

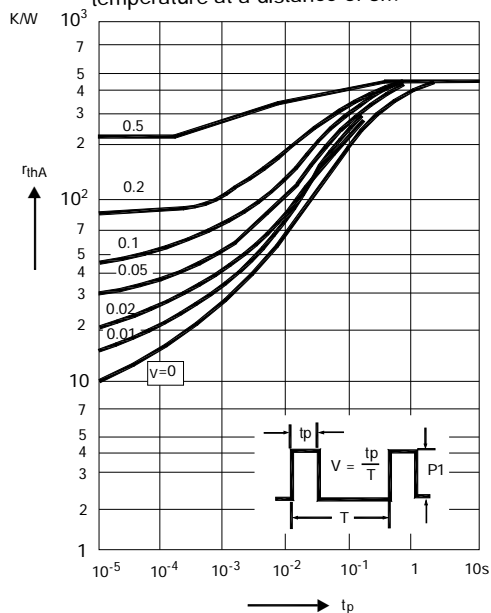


Capacitance
Zener voltage

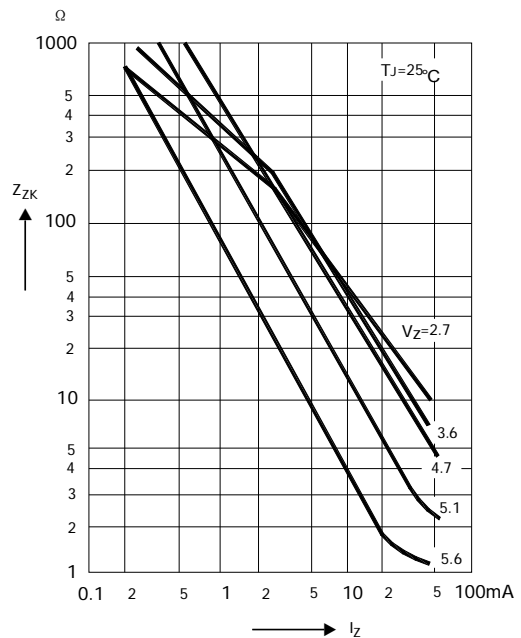


Pulse thermal resistance
versus pulse duration

Valid provided that leads are kept ambient
temperature at a distance of 8mm from case



Dynamic resistance
versus Zener current





ZENER DIODE

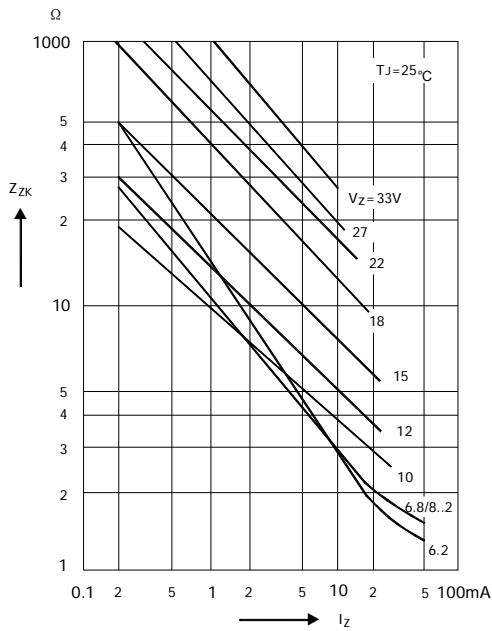
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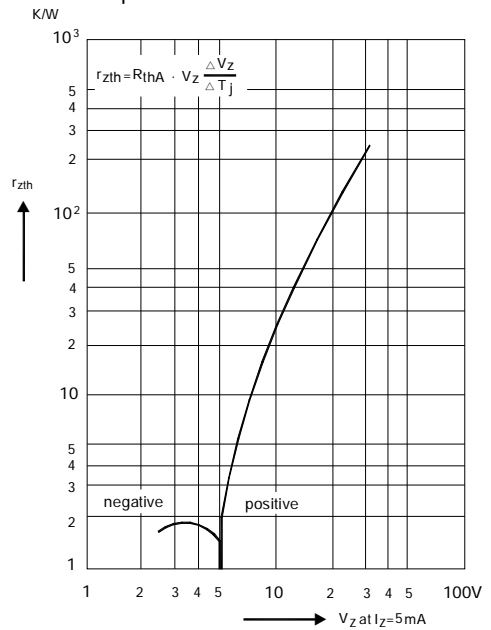
RATINGS AND CHARACTERISTIC CURVES

Dynamic resistance versus Zener current

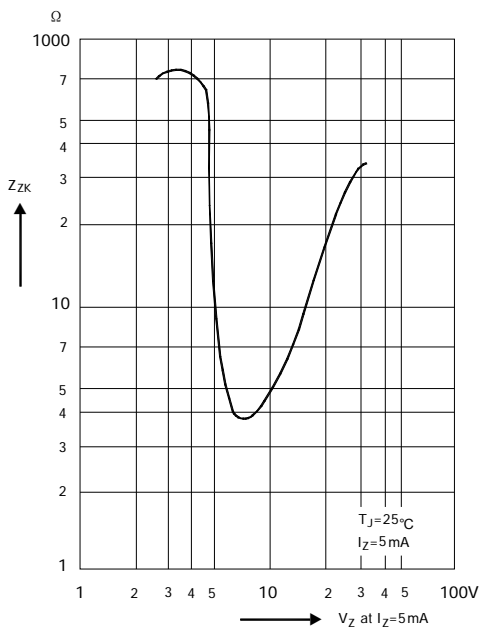


Thermal differential resistance versus Zener voltage

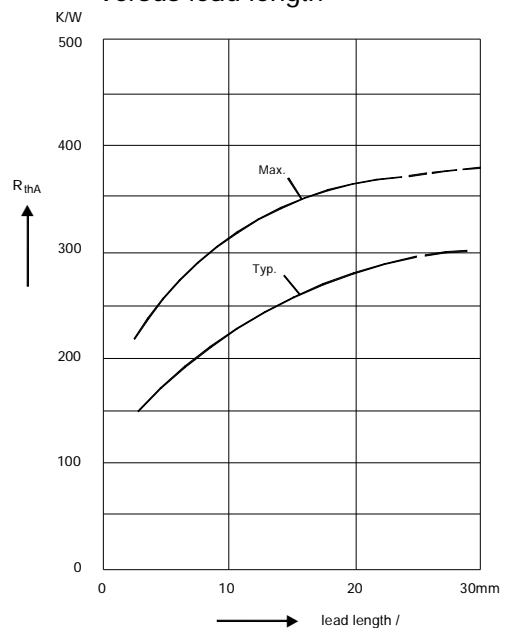
Valid provided that leads are kept at ambient temperature at a distance of 8mm from case



Dynamic resistance versus Zener voltage



Thermal resistance versus lead length





ZENER DIODE

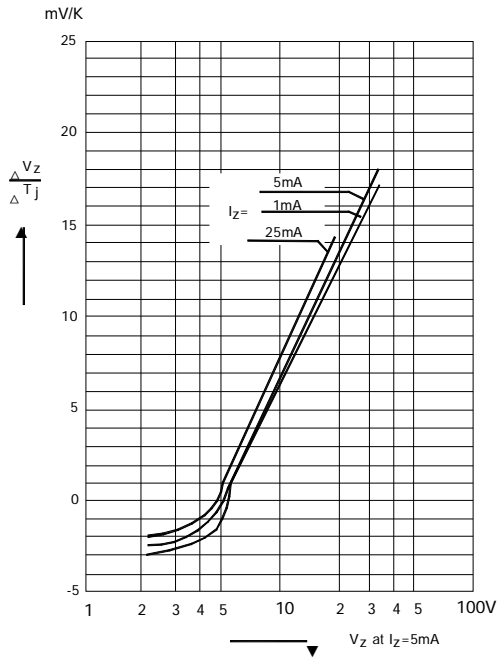
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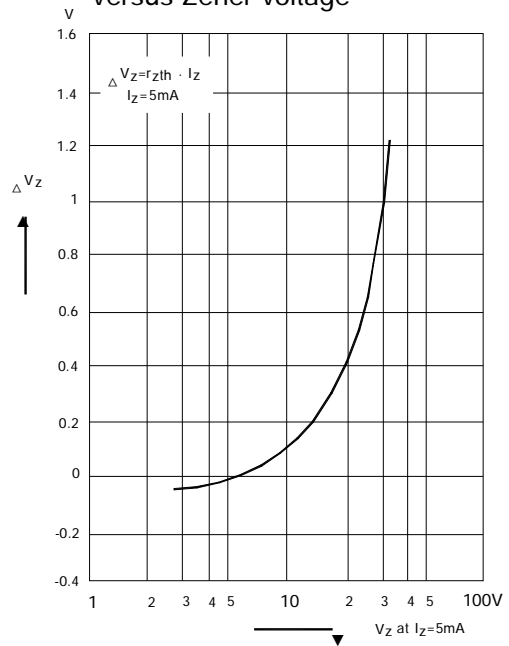
MZ0.5GE2V THRU MZ0.5GE75V

RATINGS AND CHARACTERISTIC CURVES

Temperature dependence of Zener voltage versus Zener voltage



Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



Change of Zener voltage versus junction temperature

