



ZENER DIODE

MZ0.5GN SERIES

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

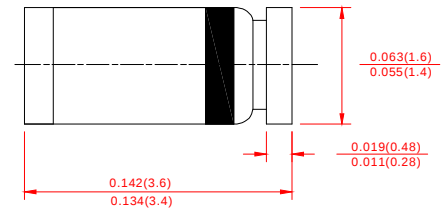
MZ0.5GE2V THRU MZ0.5GE75V

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

MINI MELF



Dimensions in inches and (millimeters)

ABSOLUTE MAXIMUM RATINGE: (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 α 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)				
			at I _{Zt} (mA)	MAX	MIN		MA X	V _R (V A)	
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)				
			MAX	MIN		M A	V _R (V A)	MAX
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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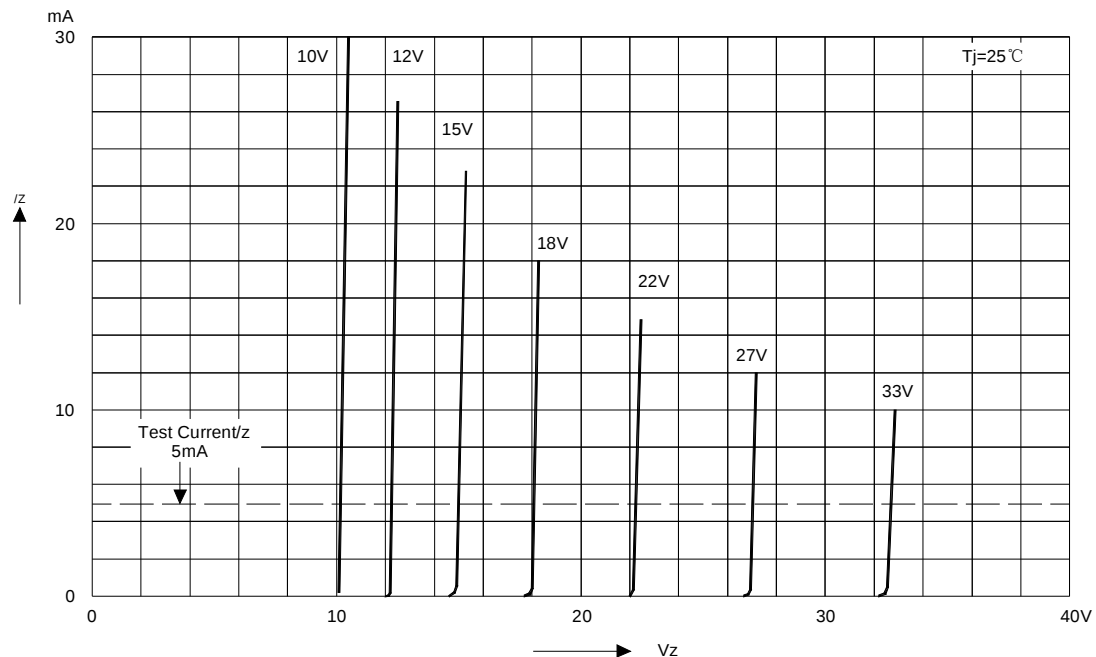
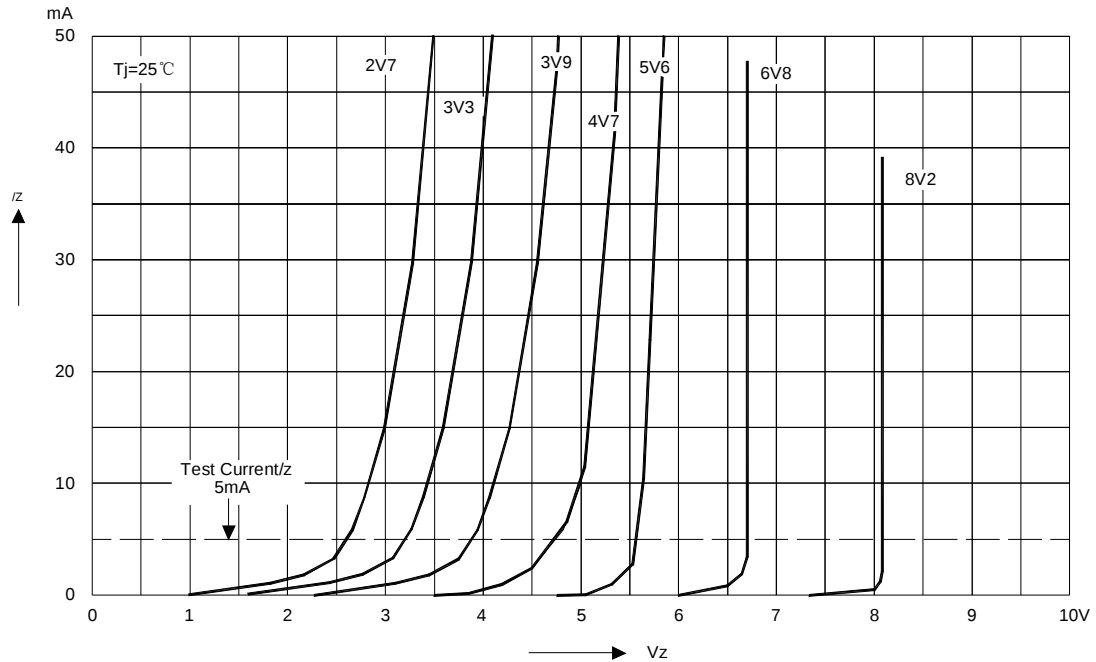
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MZ0.5GE2V THRU MZ0.5GE75V

RATINGS AND CHARACTERISTIC CURVES

Breakdown characteristics

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





ZENER DIODE

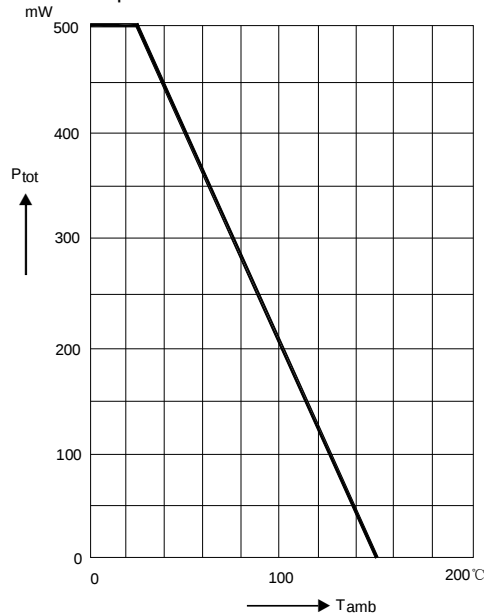
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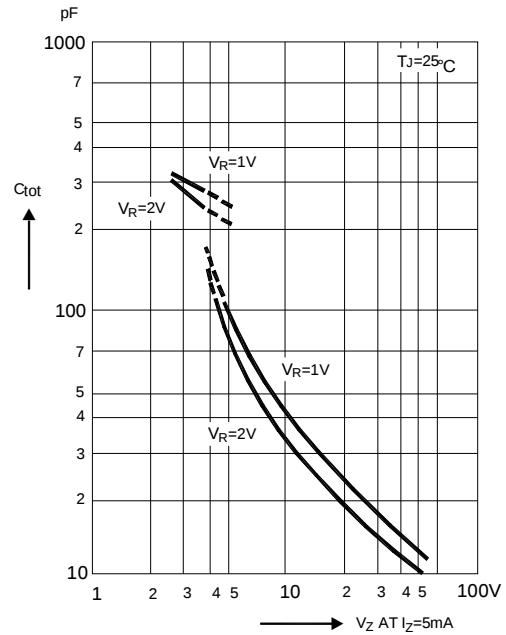
MZ0.5GE2V THRU MZ0.5GE75V

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

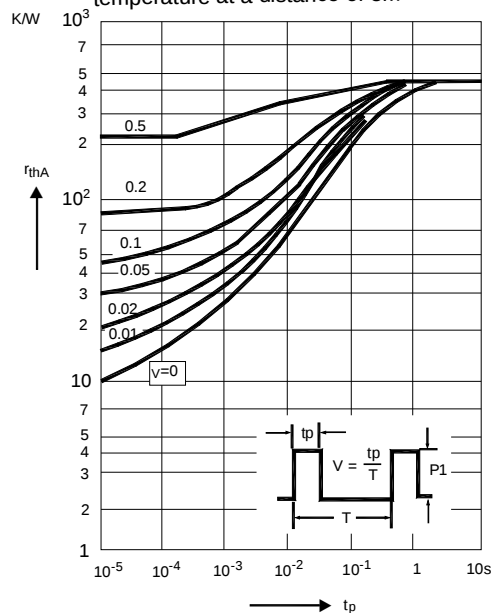


Capacitance
Zener voltage

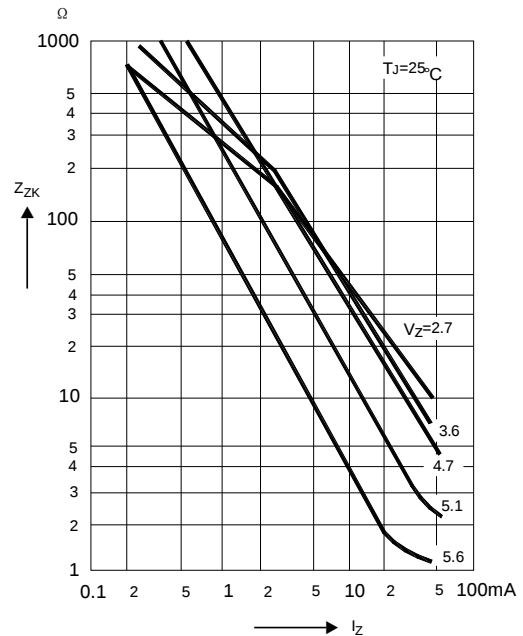


Pulse thermal resistance
versus pulse duration

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



Dynamic resistance
versus Zener current





ZENER DIODE

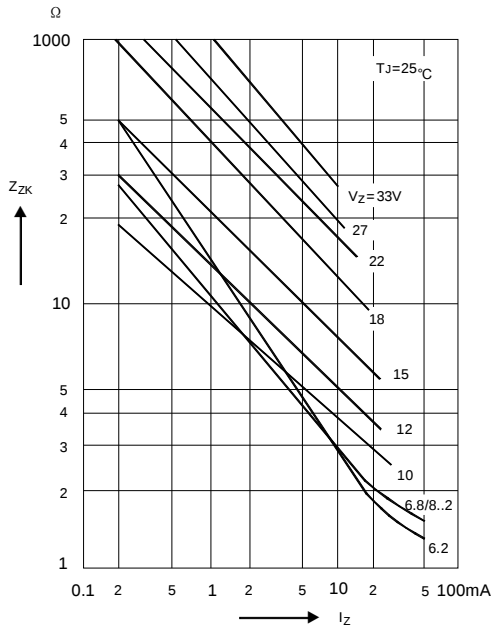
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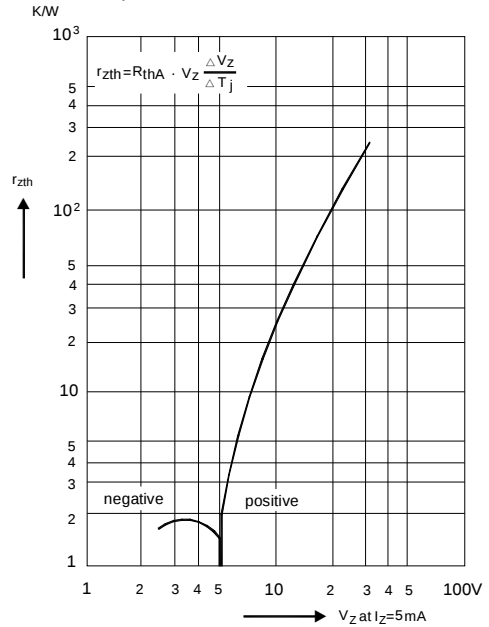
RATINGS AND CHARACTERISTIC CURVES

Dynamic resistance
versus Zener current

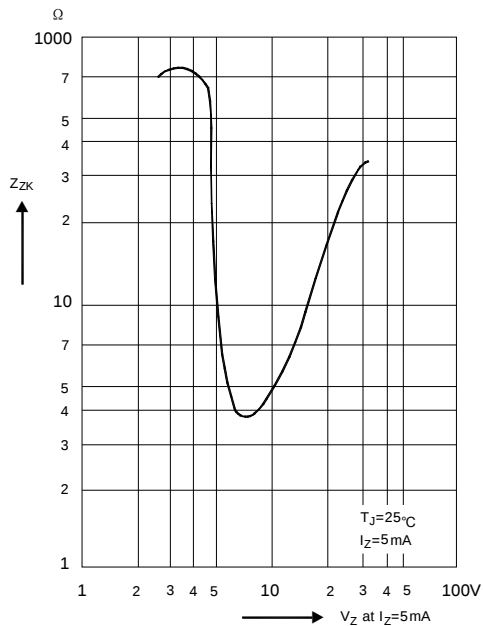


Thermal differential resistance
versus Zener voltage

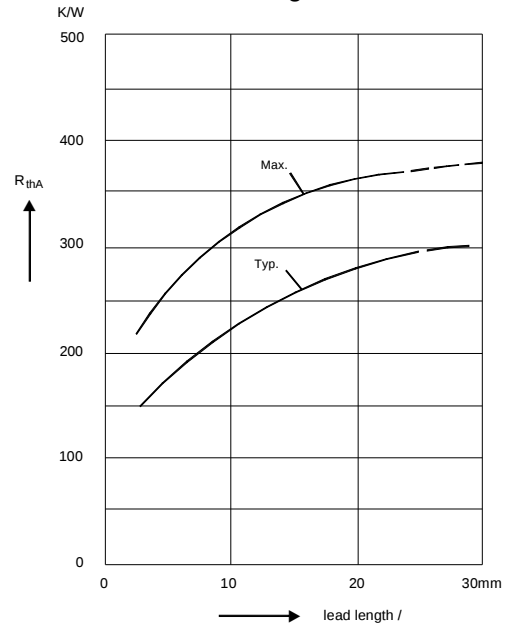
Valid provided that leads are kept at ambient temperature at a distance of 8mm from case



Dynamic resistance
versus Zener voltage



Thermal resistance
versus lead length





ZENER DIODE

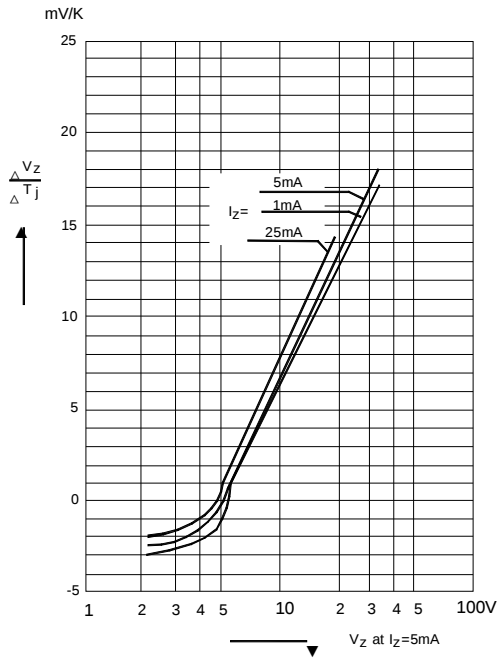
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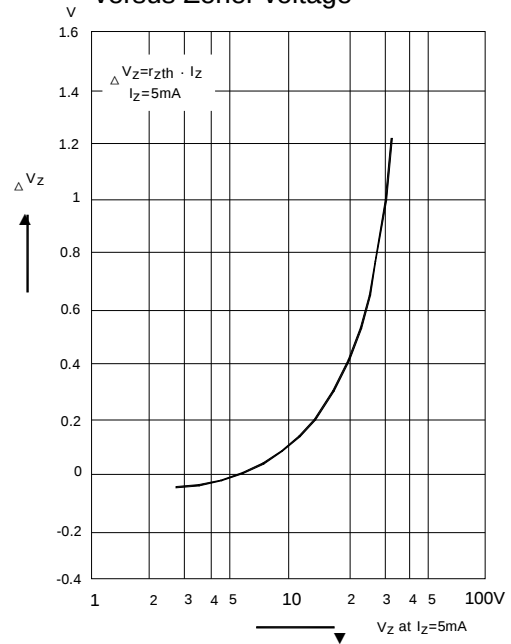
MZ0.5GE2V THRU MZ0.5GE75V

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

