

CZRL55C2V4 Thru CZRL55C75

Voltage: 2.4 - 75 Volts

Power: 500 mW

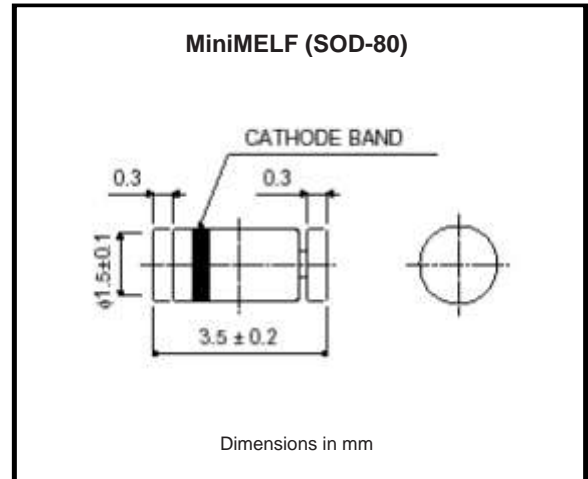


Features

Silicon Planar Power Zener Diodes
For use as low voltage stabilizer or voltage reference.
The Zener voltages are graded according to the international E 24 standard. Higher zener voltages and 1% tolerance available on request.

Mechanical data

Case: MiniMELF Glass Case (SOD-80)
Approx. Weight: 0.05 g



Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Zener Current see Table "Characteristics"			
Power Dissipation at T _{flange} = 50°C	P _{tot}	500	mW
Power Dissipation at T _A = 50°C	P _{tot}	400 ⁽¹⁾	mW
Junction temperature	T _J	-65 to +200	°C
Storage temperature range	T _S	-65 to +200	°C
Continuous Forward Current	I _F	250	mA
Thermal Resistance Junction to Ambient Air	R _{θJA}	0.38 ⁽¹⁾	°C/mW
Thermal Resistance Junction to Lead	R _{θJL}	0.30	°C/mW
Peak reverse power dissipation (non-repetitive) t _p = 100µs	P _{ZSM}	30 ⁽²⁾	W

Notes: (1) Mounted on ceramic substrate 10mm x 10mm x 0.6mm
(2) T_J = 150°C

Maximum Ratings and Electrical Characteristics

(TA=25°C unless otherwise noted) Max. $V_F = 0.9V$ at $I_F = 10mA$

Type y = B for $\pm 2\%$ VZ y = F for $\pm 3\%$ VZ y = C for $\pm 5\%$ VZ	Dynamic Resistance		Temperature coefficient of Zener Voltage at $I_Z = 5mA$		Reverse leakage current at $T_{amb} = 25^\circ C$	
	at $I_Z = 5mA$ f = 1kHz r_{zj} (ohm) max	at $I_Z = 1mA$ f = 1kHz r_{zj} (ohm) max	α_{VZ} (% / °C)		I_R (uA)	at V_R (V)
			Min	Max		
CZRL55C2V4	100.0	600	-0.08	-0.06	50	1
CZRL55C2V7	100.0	600	-0.08	-0.06	20	1
CZRL55C3V0	95.0	600	-0.08	-0.06	10	1
CZRL55C3V3	95.0	600	-0.08	-0.05	5	1
CZRL55C3V6	90.0	600	-0.08	-0.04	5	1
CZRL55C3V9	90.0	600	-0.07	-0.03	3	1
CZRL55C4V3	90.0	600	-0.04	-0.01	3	1
CZRL55C4V7	80.0	500	-0.03	+0.01	3	2
CZRL55C5V1	60.0	480	-0.02	+0.05	2	2
CZRL55C5V6	40.0	400	-0.01	+0.06	1	2
CZRL55C6V2	10.0	150	0	+0.07	3	4
CZRL55C6V8	15.0	80	+0.01	+0.08	2	4
CZRL55C7V5	15.0	80	+0.01	+0.09	1	5
CZRL55C8V2	15.0	80	+0.01	+0.09	0.7	5
CZRL55C9V1	15.0	100	+0.02	+0.1	0.5	6
CZRL55C10	20.0	150	+0.03	+0.11	0.2	7
CZRL55C11	20.0	150	+0.03	+0.11	0.1	8
CZRL55C12	25.0	150	+0.03	+0.11	0.1	8
CZRL55C13	30.0	170	+0.03	+0.11	0.1	8
CZRL55C15	30	200	+0.03	+0.11	0.05	10
CZRL55C16	40	200	+0.03	+0.11	0.05	11
CZRL55C18	45	225	+0.03	+0.11	0.05	13
CZRL55C20	55	225	+0.03	+0.11	0.05	14
CZRL55C22	55	250	+0.03	+0.11	0.05	15
CZRL55C24	70	250	+0.04	+0.12	0.05	17
CZRL55C27	80(3)	300(4)	+0.04(3)	+0.12 (3)	0.05	19
CZRL55C30	80(3)	300(4)	+0.04(3)	+0.12 (3)	0.05	21
CZRL55C33	80(3)	325(4)	+0.04(3)	+0.12 (3)	0.05	23
CZRL55C36	90(3)	350(4)	+0.04(3)	+0.12 (3)	0.05	25
CZRL55C39	130(3)	350(4)	+0.04(3)	+0.12 (3)	0.05	27
CZRL55C43	150(3)	375(4)	+0.04(3)	+0.12 (3)	0.05	30
CZRL55C47	170(3)	375(4)	+0.04(3)	+0.12 (3)	0.05	33
CZRL55C51	180(3)	400(4)	+0.04(3)	+0.12 (3)	0.05	36
CZRL55C56	200(3)	425(4)	typ. +0.1(3)		0.05	39
CZRL55C62	215(3)	450(4)	typ. +0.1(3)		0.05	43
CZRL55C68	240(3)	475(4)	typ. +0.1(3)		0.05	48
CZRL55C75	255(3)	500(4)	typ. +0.1(3)		0.05	53

Notes:

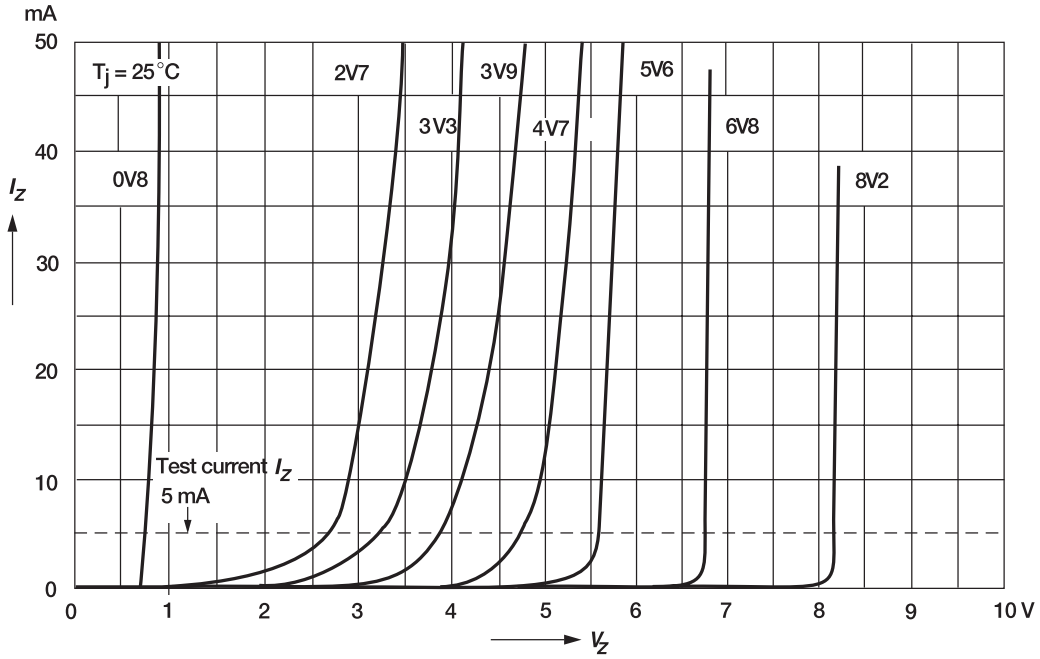
- (1) Tested with pulses $t_p = 5$ ms.
 - (2) Valid provided that electrodes are kept at ambient temperature.
 - (3) at $I_Z = 2.0$ mA
 - (4) at $I_Z = 0.5$ mA
- y = Zener voltage tolerance designator (see next page for VZ specifications)

Rating and Characteristic Curves (CZRL55C2V4 Thru CZRL55C75)

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

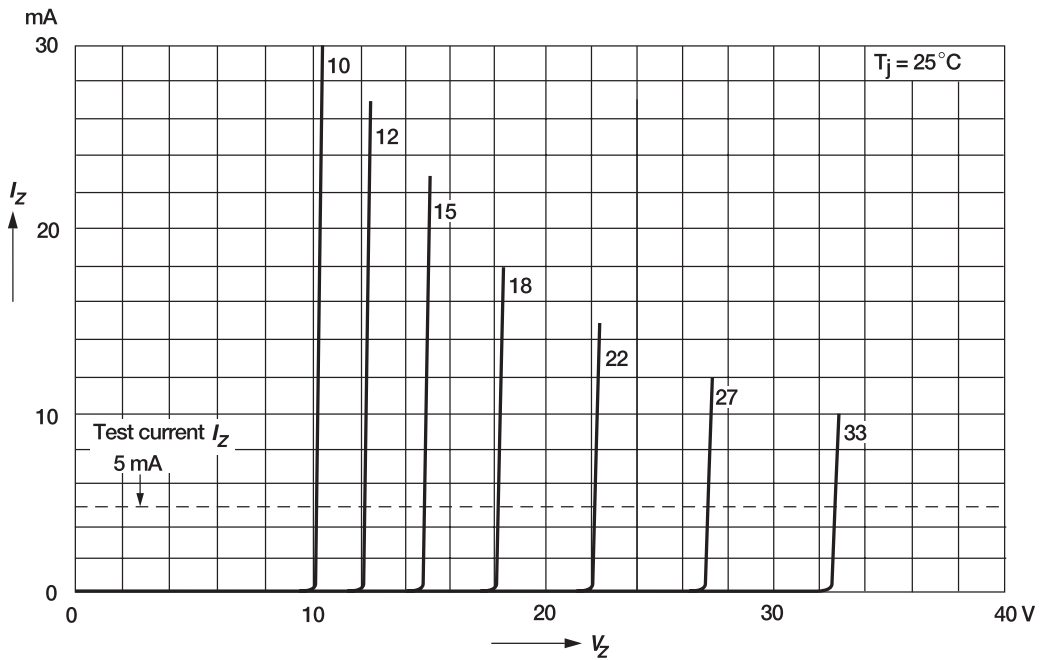
Breakdown characteristics

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



Breakdown characteristics

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

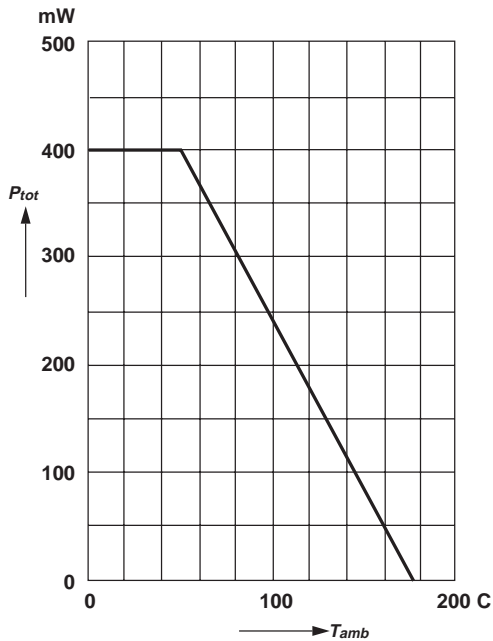


Rating and Characteristic Curves (CZRL55C2V4 Thru CZRL55C75)

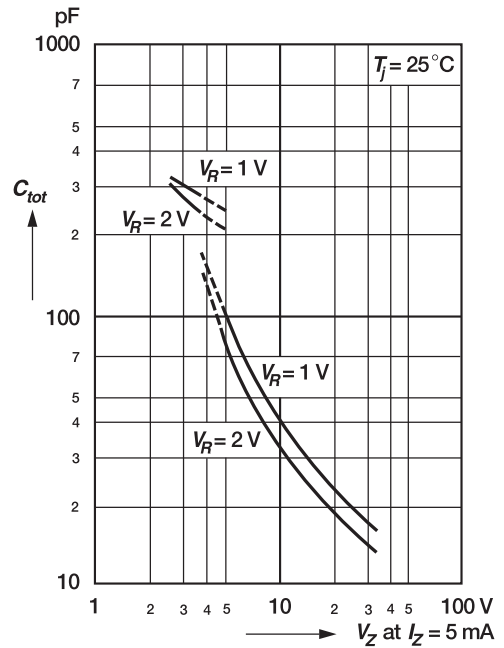
($T_A = 25^\circ\text{C}$ unless otherwise noted)

Admissible power dissipation versus ambient temperature

Valid provided that leads are kept ambient temperature.

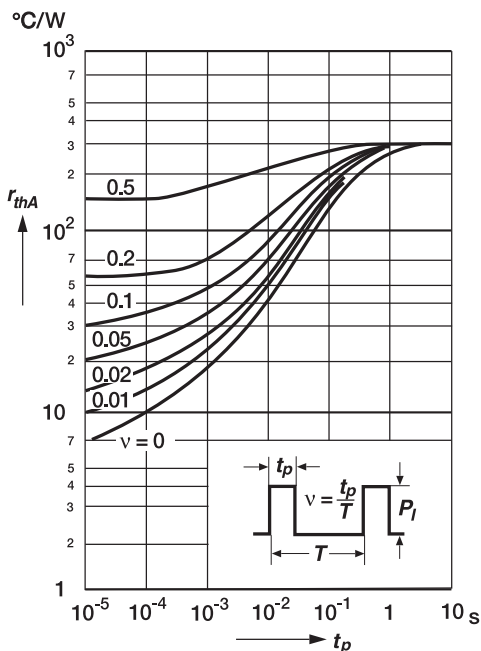


Capacitance versus Zener voltage

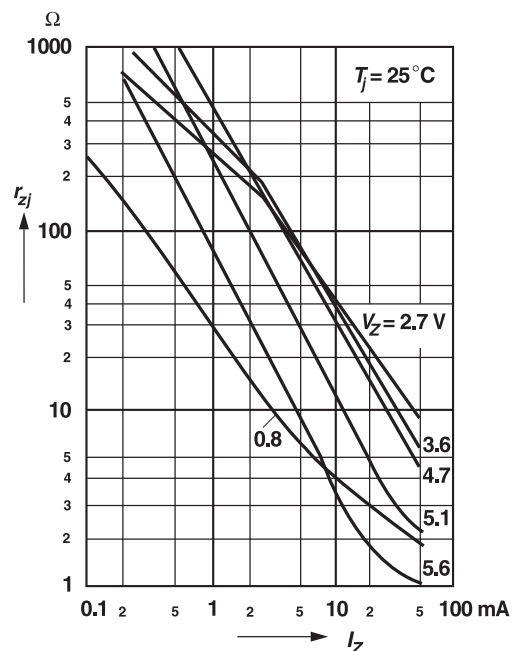


Pulse thermal resistance versus pulse duration

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



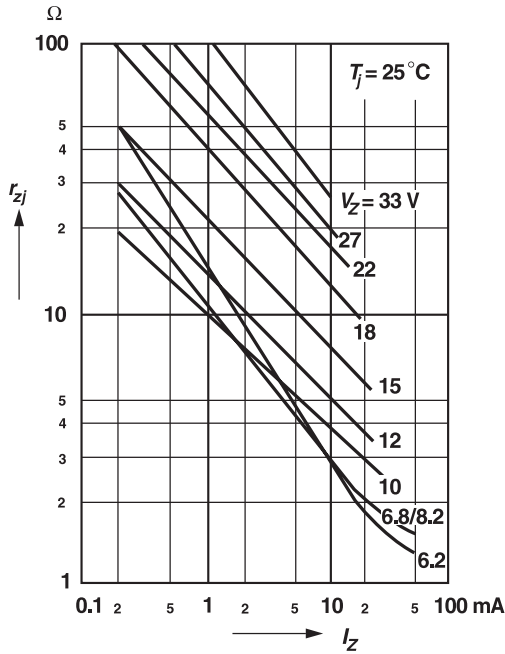
Dynamic resistance versus Zener current



Rating and Characteristic Curves (CZRL55C2V4 Thru CZRL55C75)

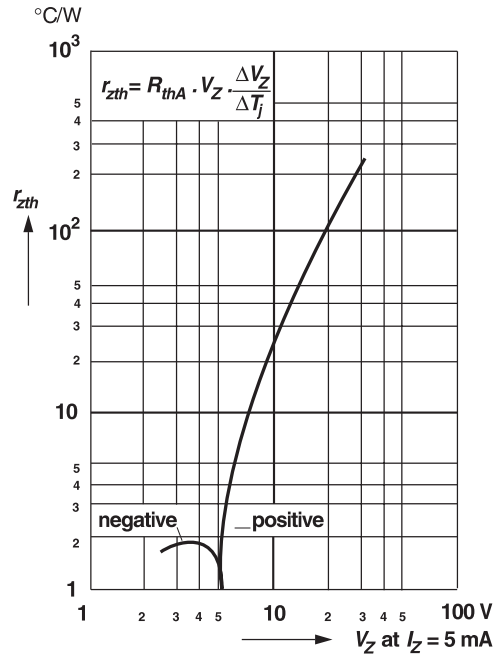
(T_A = 25°C unless otherwise noted)

Dynamic resistance versus Zener current

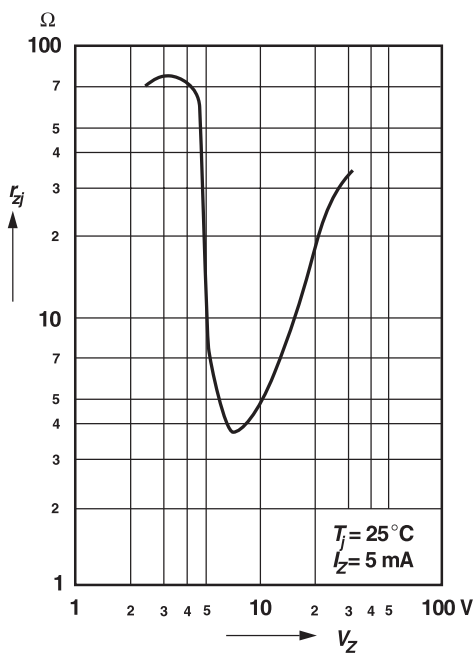


Thermal differential resistance versus Zener voltage

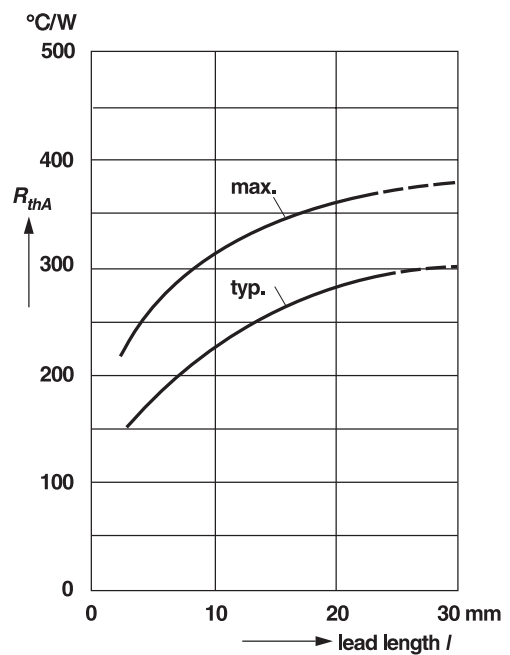
Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



Dynamic resistance versus Zener voltage



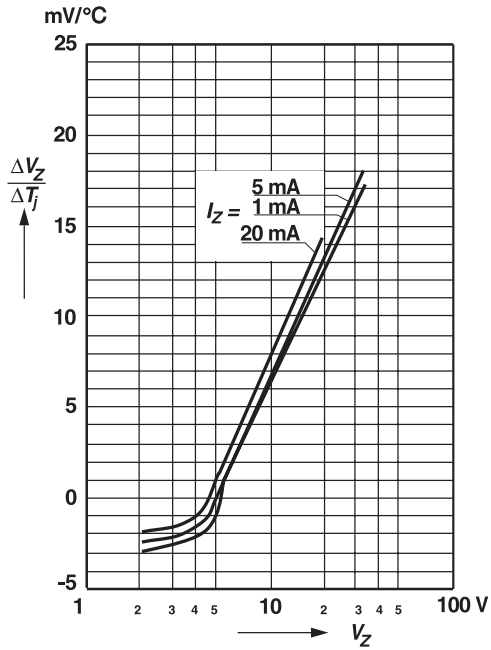
Thermal resistance versus lead length



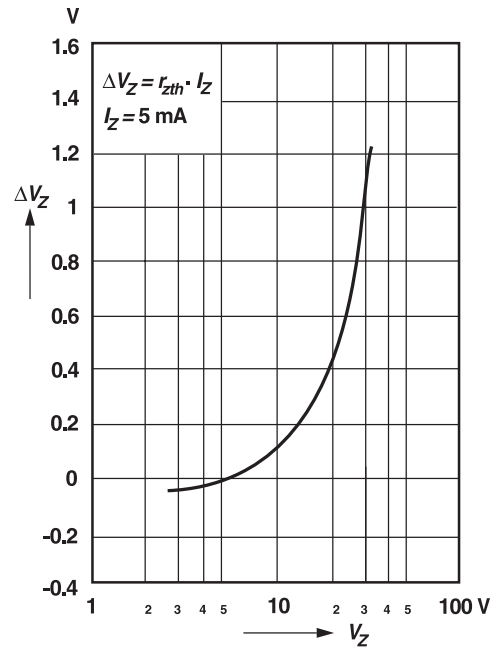
Rating and Characteristic Curves (CZRL55C2V4 Thru CZRL55C75)

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

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

