



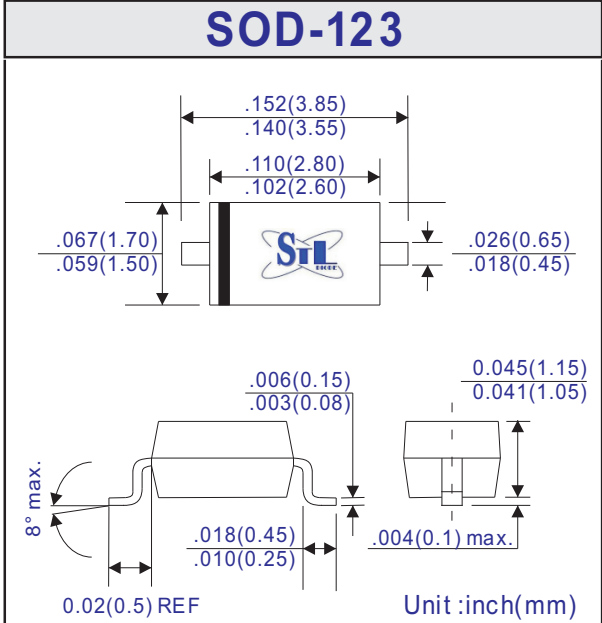
BZT52 Series

500mW Surface Mount Zener Diodes - 2.4V - 75V



- ### FEATURES
- For use as low voltage stabilizer or voltage reference
 - Silicon epitaxial planar chip structions
 - Also available in SOT-23 as BZX84 series, SOD-323 as BZT52-S series, SOD-523 as BZT52-T series, SOT-323 as BZX84-W series, SOT-523 as BZX84-T series and SOD-80 as BZV55 series.
 - Standard regulaion tolerance is $\pm 5\%$ with suffix "C", place suffix "C" with "B" for $\pm 2\%$
 - Ultra small surface mounting type
 - Lead-free parts for green partner

- ### MECHANICAL DATA
- Case: Molded plastic SOD-123 case
 - Epoxy: UL94-V0 rated flame retardant
 - Terminals: Solderable per MIL-STD-202 Method 208
 - Polarity: Color band denotes cathode end
 - Mounting Position: Any
 - Weight: 0.01 grams



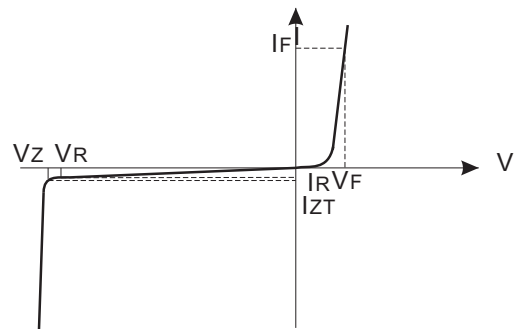
MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

	Symbols	BZT52 Series	Units
Power Dissipation, Note 1	P _d	500	mW
Zener Current	I _{ZM}	250	mA
Operating Junction Temperature Range	T _J	-65 ~ +150	°C
Thermal Resistance, junction to ambient, Note 2	R _{θJA}	300	°C/W
Storage Temperature Range	T _{STG}	-65 ~ +150	°C
Forward Voltage at I _F =10mA	V _F	0.9	Volt

Note 1. Device mounted on ceramic PCB 7.6mm x 9.4mm x 0.87mm with pad areas 25mm square.
 2. Valid provided that electrodes are kept at ambient temperature

- V_Z: Reverse Zener Voltage @ I_{ZT}
- I_{ZT}: Reverse Current
- Z_{ZT}: Maximum Zener Impedance @ I_{ZT}
- I_{ZK}: Reverse Current
- Z_{ZK}: Maximum Zener Impedance @ I_{ZK}
- I_R: Reverse Leakage Current @ V_R
- V_R: Reverse Voltage
- I_F: Forward Current
- V_F: Forward Voltage @ I_F



Zener Voltage Regulation



BZT52 Series

MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

Part No.	Electical Characteristics (Ta=25°C)								Temp. Coefficient	
	Vz(Min)	Vz(Max)	IzT	Max. ZzT	IzK	Max. ZzK	IR(uA) Max.	at IzT (%/K)		
	(V)	(V)	(mA)	(Ω)	(mA)	(Ω)	VR(V)	Min.	Max.	
BZT52-C2V4	2.20	2.60	5.0	100	1.0	600	50	1	-0.08	-0.06
BZT52-C2V7	2.50	2.90	5.0	100	1.0	600	20	1	-0.09	-0.04
BZT52-C3V0	2.80	3.20	5.0	95	1.0	600	10	1	-0.09	-0.03
BZT52-C3V3	3.10	3.50	5.0	95	1.0	600	5	1	-0.08	-0.03
BZT52-C3V6	3.40	3.80	5.0	90	1.0	600	3	1	-0.08	-0.03
BZT52-C3V9	3.70	4.10	5.0	90	1.0	600	3	1	-0.07	-0.03
BZT52-C4V3	4.00	4.60	5.0	90	1.0	600	3	1	-0.06	-0.01
BZT52-C4V7	4.40	5.00	5.0	80	1.0	500	2	2	-0.05	+0.02
BZV52-C5V1	4.80	5.40	5.0	60	1.0	480	1	2	-0.03	+0.04
BZT52-C5V6	5.20	6.00	5.0	40	1.0	400	3	2	-0.02	+0.06
BZT52-C6V2	5.80	6.60	5.0	10	1.0	150	2	4	-0.01	+0.07
BZT52-C6V8	6.40	7.20	5.0	15	1.0	80	1	4	+0.02	+0.07
BZT52-C7V5	7.00	7.90	5.0	15.0	1.0	80	0.7	5	+0.03	+0.07
BZT52-C8V2	7.70	8.70	5.0	15	1.0	80	0.5	5	+0.04	+0.07
BZT52-C9V1	8.50	9.60	5.0	15	1.0	100	0.2	6	+0.05	+0.08
BZT52-C10	9.40	10.60	5.0	20	1.0	150	0.1	7	+0.05	+0.08
BZT52-C11	10.40	11.60	5.0	20.0	1.0	150	0.1	8	+0.05	+0.09
BZT52-C12	11.40	12.70	5.0	25.0	1.0	150	0.1	8	+0.06	+0.09
BZT52-C13	12.40	14.10	5.0	30.0	1.0	170	0.05	8	+0.07	+0.09
BZT52-C15	13.80	15.60	5.0	30	1.0	200	0.05	10	+0.07	+0.09
BZT52-C16	15.30	17.10	5.0	40	1.0	200	0.05	11	+0.08	+0.095
BZT52-C18	16.80	19.10	5.0	45	1.0	225	0.05	13	+0.08	+0.095
BZT52-C20	18.80	21.20	5.0	55	1.0	225	0.05	14	+0.08	+0.1
BZT52-C22	20.80	23.30	5.0	55	1.0	250	0.05	15	+0.08	+0.1
BZT52-C24	22.80	25.60	5.0	70	1.0	250	0.05	17	+0.08	+0.1
BZT52-C27	25.10	28.90	2.0	80	0.5	300	0.05	19	+0.08	+0.1
BZT52-C30	28.00	32.00	2.0	80	0.5	300	0.05	21	+0.08	+0.1
BZT52-C33	31.00	35.00	2.0	80	0.5	325	0.05	23	+0.08	+0.1
BZT52-C36	34.00	38.00	2.0	90	0.5	350	0.05	25	+0.08	+0.1
BZT52-C39	37.00	41.00	2.0	130	0.5	350	0.05	27	+0.1	+0.12
BZT52-C43	40.00	46.00	2.0	150	0.5	375	0.05	30	+0.1	+0.12
BZT52-C47	44.00	50.00	2.0	170	0.5	375	0.05	33	+0.1	+0.12
BZT52-C51	48.00	54.00	2.0	180	0.5	400	0.05	36	+0.1	+0.12
BZT52-C56	52.00	60.00	2.0	200	0.5	425	0.05	39	+0.1	+0.1
BZT52-C62	58.00	66.00	2.0	215	0.5	450	0.05	43	+0.1	+0.1
BZT52-C68	64.00	72.00	2.0	240	0.5	475	0.05	48	+0.1	+0.1
BZT52-C75	70.00	79.00	2.0	255	0.5	500	0.05	53	+0.1	+0.1

* The type number listed have zener voltages minimum & maximum limits as shown and have a standard tolerance on the nominal zener voltage 5%



BZT52 Series

MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

Part No.	Electical Characteristics (Ta=25°C)								Temp. Coefficient	
	Vz(Min)	Vz(Max)	IzT	Max. ZzT	IzK	Max. ZzK	IR(uA) Max.	at IzT (%/K)		
	(V)	(V)	(mA)	(Ω)	(mA)	(Ω)	VR(V)	Min.	Max.	
BZT52-B2V4	2.35	2.45	5.0	100	1.0	600	50	1	-0.08	-0.06
BZT52-B2V7	2.65	2.75	5.0	100	1.0	600	20	1	-0.09	-0.04
BZT52-B3V0	2.94	3.06	5.0	95	1.0	600	10	1	-0.09	-0.03
BZT52-B3V3	3.23	3.37	5.0	95	1.0	600	5	1	-0.08	-0.03
BZT52-B3V6	3.53	3.67	5.0	90	1.0	600	3	1	-0.08	-0.03
BZT52-B3V9	3.82	3.98	5.0	90	1.0	600	3	1	-0.07	-0.03
BZT52-B4V3	4.21	4.39	5.0	90	1.0	600	3	1	-0.06	-0.01
BZT52-B4V7	4.61	4.79	5.0	80	1.0	500	2	2	-0.05	+0.02
BZV52-B5V1	5.00	5.20	5.0	60	1.0	480	1	2	-0.03	+0.04
BZT52-B5V6	5.49	5.71	5.0	40	1.0	400	3	2	-0.02	+0.06
BZT52-B6V2	6.08	6.32	5.0	10	1.0	150	2	4	-0.01	+0.07
BZT52-B6V8	6.66	6.94	5.0	15	1.0	80	1	4	+0.02	+0.07
BZT52-B7V5	7.35	7.65	5.0	15	1.0	80	0.7	5	+0.03	+0.07
BZT52-B8V2	8.04	8.36	5.0	15	1.0	80	0.5	5	+0.04	+0.07
BZT52-B9V1	8.92	9.28	5.0	15	1.0	100	0.2	6	+0.05	+0.08
BZT52-B10	9.80	10.20	5.0	20	1.0	150	0.1	7	+0.05	+0.08
BZT52-B11	10.80	11.20	5.0	20	1.0	150	0.1	8	+0.05	+0.09
BZT52-B12	11.80	12.20	5.0	25	1.0	150	0.1	8	+0.06	+0.09
BZT52-B13	12.70	13.30	5.0	30	1.0	170	0.05	8	+0.07	+0.09
BZT52-B15	14.70	15.30	5.0	30	1.0	200	0.05	10	+0.07	+0.09
BZT52-B16	15.70	16.30	5.0	40	1.0	200	0.05	11	+0.08	+0.095
BZT52-B18	17.60	18.40	5.0	45	1.0	225	0.05	13	+0.08	+0.095
BZT52-B20	19.60	20.40	5.0	55	1.0	225	0.05	14	+0.08	+0.1
BZT52-B22	21.60	22.40	5.0	55	1.0	250	0.05	15	+0.08	+0.1
BZT52-B24	23.50	24.50	5.0	70	1.0	250	0.05	17	+0.08	+0.1
BZT52-B27	26.50	27.50	2.0	80	0.5	300	0.05	19	+0.08	+0.1
BZT52-B30	29.40	30.60	2.0	80	0.5	300	0.05	21	+0.08	+0.1
BZT52-B33	32.30	33.70	2.0	80	0.5	325	0.05	23	+0.08	+0.1
BZT52-B36	35.30	36.70	2.0	90	0.5	350	0.05	25	+0.08	+0.1
BZT52-B39	38.20	39.80	2.0	130	0.5	350	0.05	27	+0.1	+0.12
BZT52-B43	42.10	43.90	2.0	150	0.5	375	0.05	30	+0.1	+0.12
BZT52-B47	46.10	47.90	2.0	170	0.5	375	0.05	33	+0.1	+0.12
BZT52-B51	50.00	52.00	2.0	180	0.5	400	0.05	36	+0.1	+0.12
BZT52-B56	54.90	57.10	2.0	200	0.5	425	0.05	39	+0.1	+0.1
BZT52-B62	60.80	63.20	2.0	215	0.5	450	0.05	43	+0.1	+0.1
BZT52-B68	66.60	69.40	2.0	240	0.5	475	0.05	48	+0.1	+0.1
BZT52-B75	73.50	79.50	2.0	255	0.5	500	0.05	53	+0.1	+0.1

* The type number listed have zener voltages minimum & maximum limits as shown and have a standard tolerance on the nominal zener voltage 2%



Fig. 1A - Zener Voltage vs Zener Current Curve

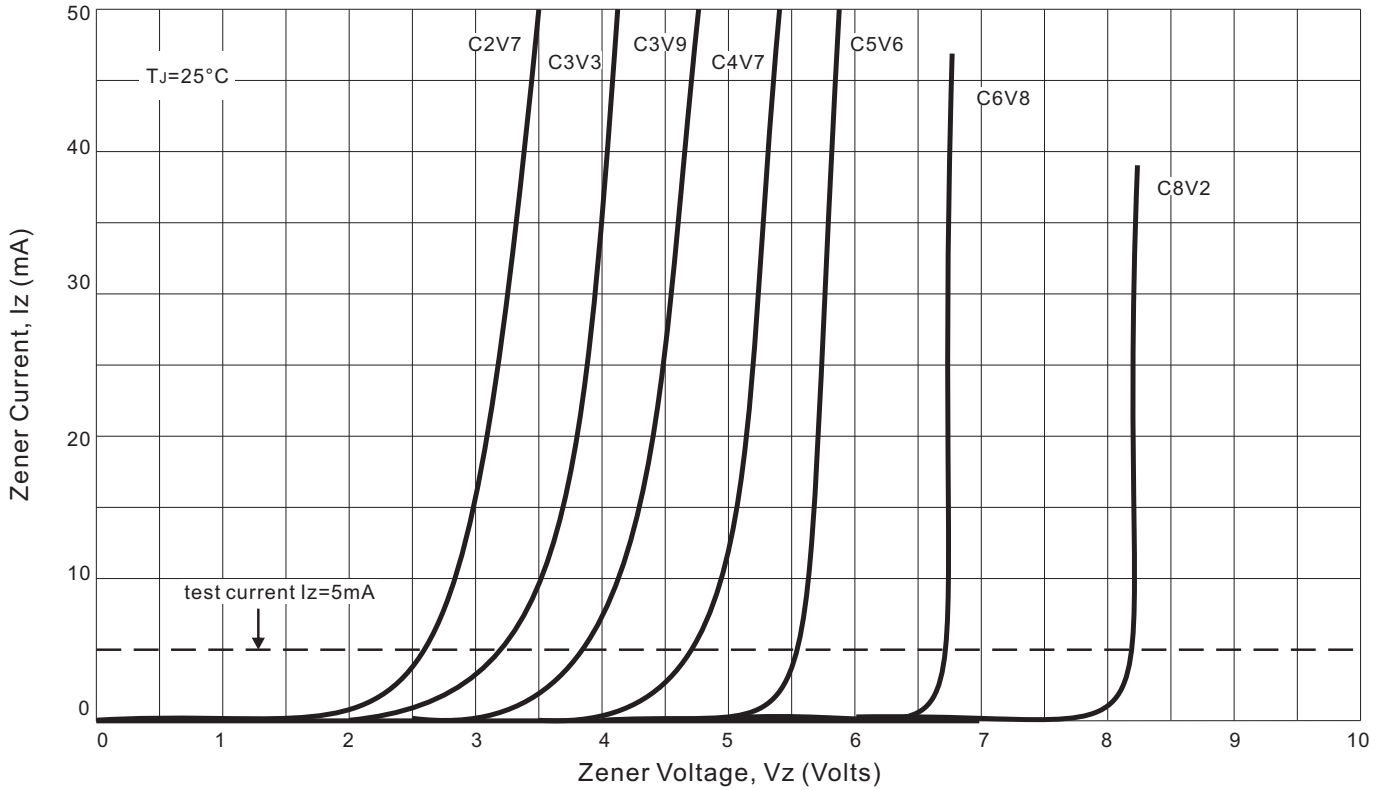


Fig. 1B - Zener Voltage vs Zener Current Curve

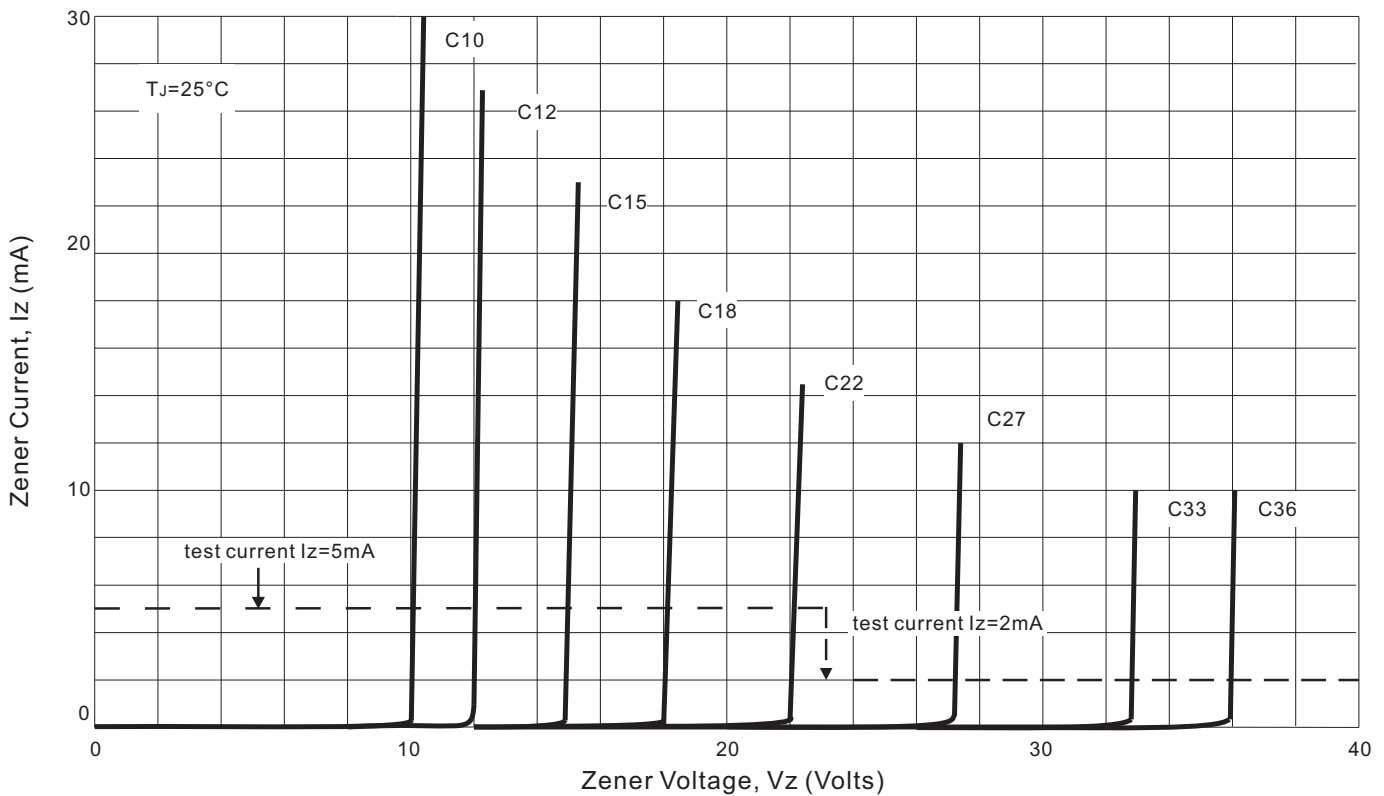




Fig. 1C - Zener Voltage vs Zener Current Curve

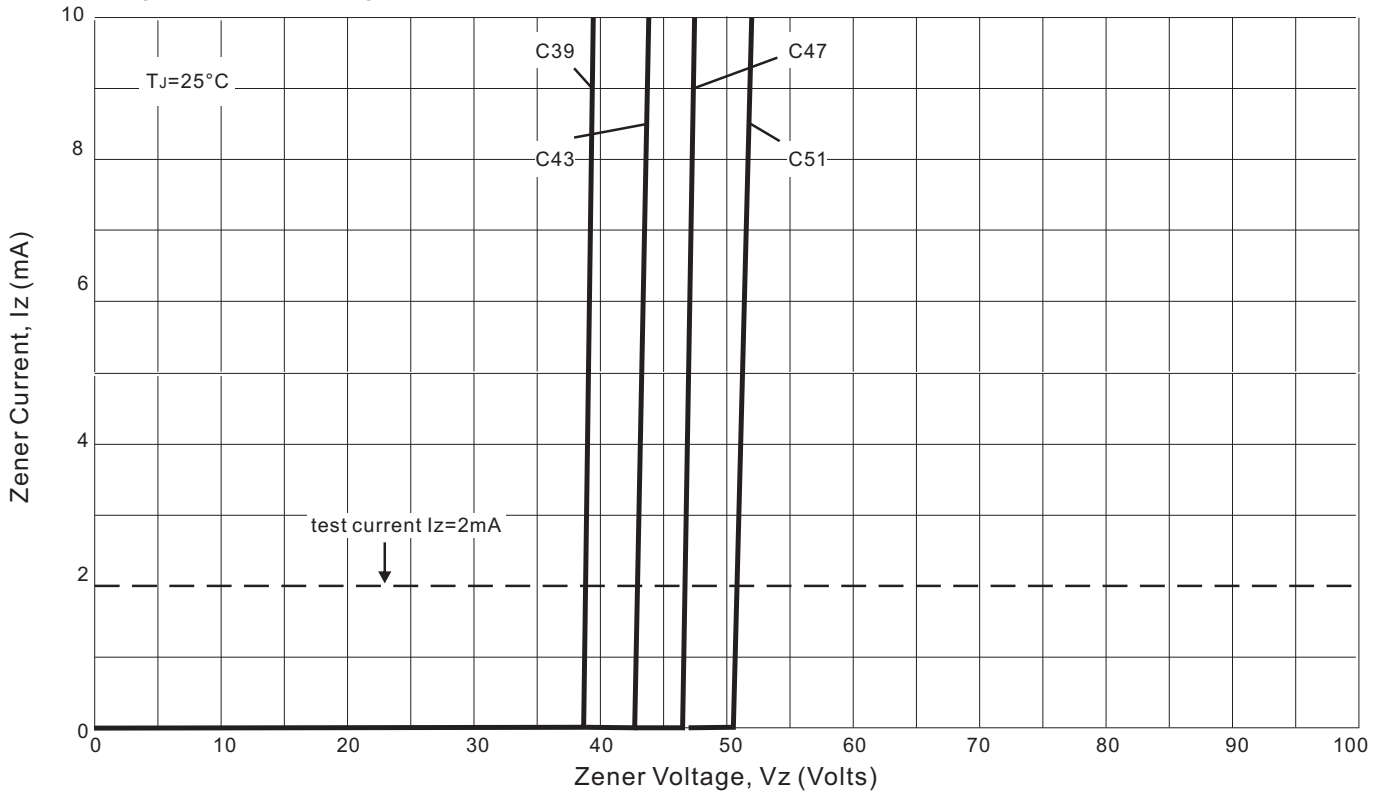


Fig. 2A - Dynamic Resistance Curve

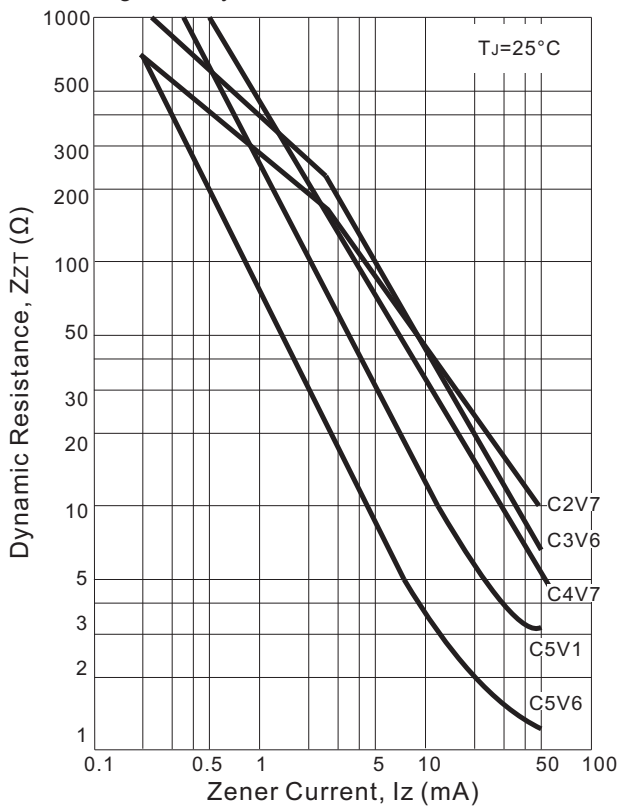


Fig. 2B - Dynamic Resistance Curve

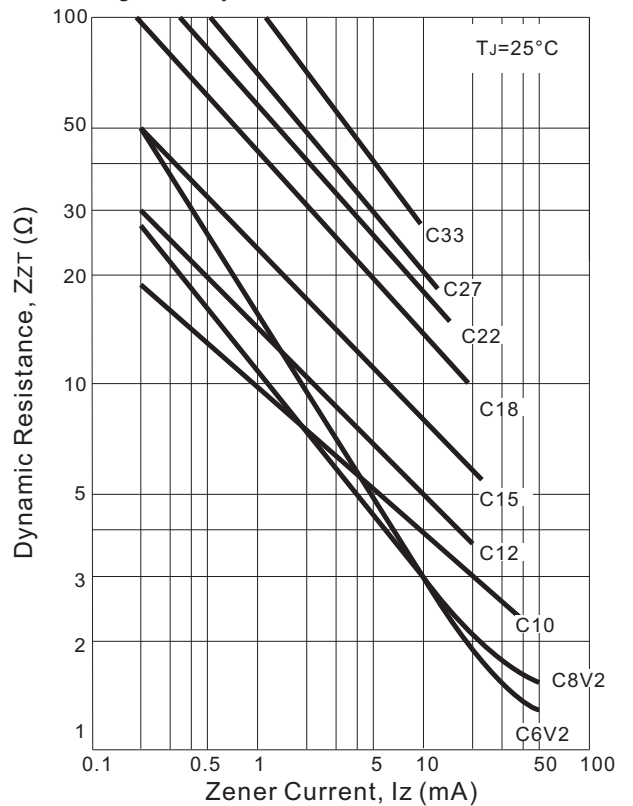




Fig. 3 - Power Dissipation Derating Curve

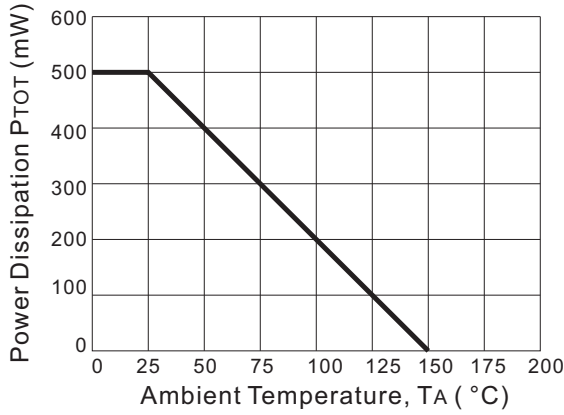


Fig. 4 - Change of Zener Voltage Curve

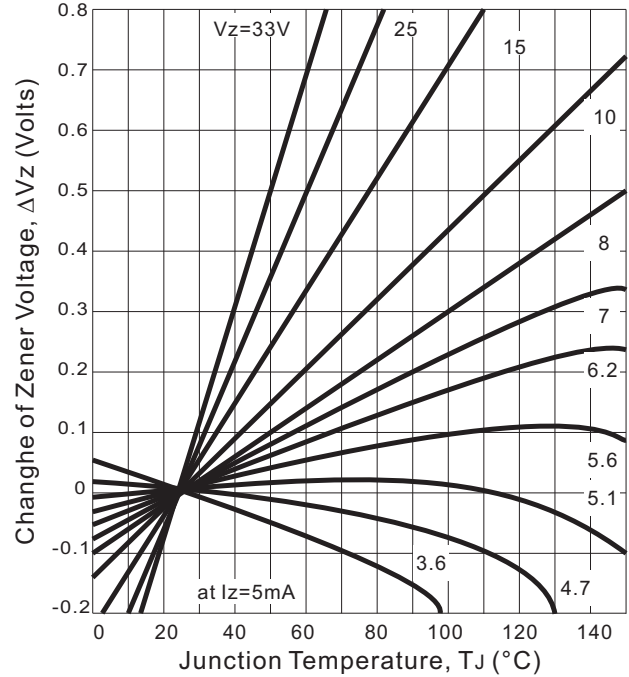


Fig. 5 - Capacitance Curve

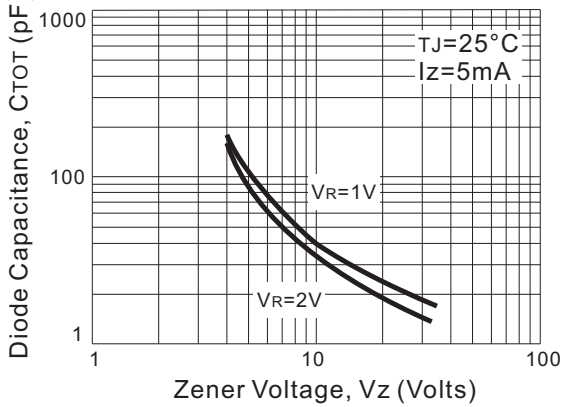


Fig. 7 - Pulse Thermal Resistance curve
 Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case

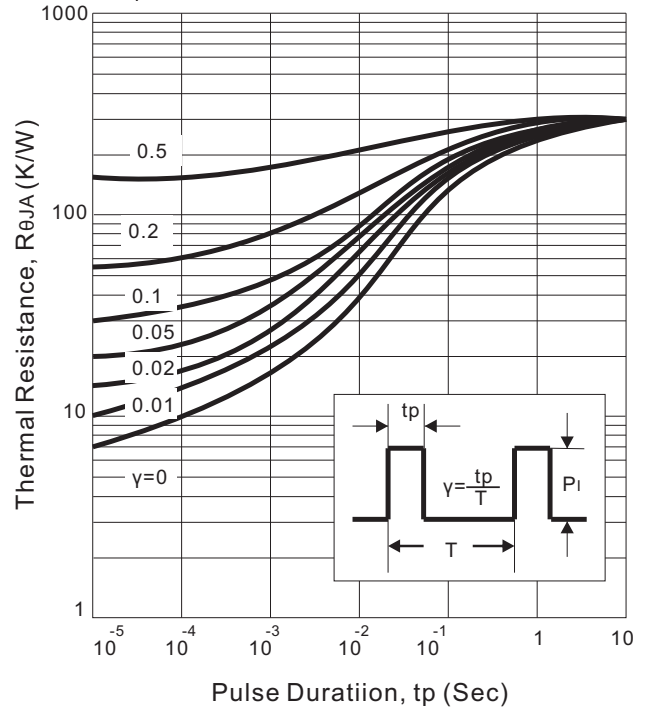


Fig. 6 - Dynamic Resistance Curve

