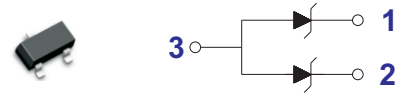




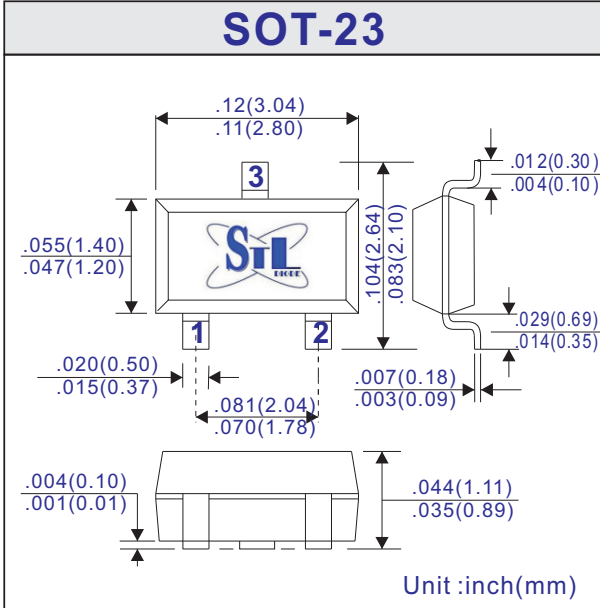
# BZD84 Series

## 300mW Surface Mount Dual Zener Voltage Regulator Diodes - 2.7V - 51V



- ### FEATURES
- For use as low voltage stabilizer or voltage reference
  - Silicon epitaxial planar chip struction
  - Standard  $\pm 5\%$  voltage regulaion tolerance
  - Dual zener general purpose, medium current.
  - Small surface mounting type, ideally for automated assembly process
  - 300mW power dissipation on FR-5 P.C.B.
  - Lead-free parts for green partnet

- ### MECHANICAL DATA
- Case: SOD-23 molded plastic body
  - Terminals: Solderable per MIL-STD-202 Method 208
  - Polarity: Color band denotes cathode end
  - Mounting Position: Any
  - Weight: approx. 0.008 grams



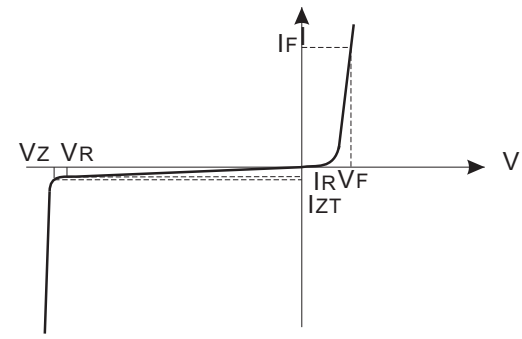
### MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

	Symbols	<b>BZD84 Series</b>	Units
Power Dissipation at TA=25°C, mounted on FR-5 P.C.B. Derate above 25°C, Note 1	PD	300 1.8	mW mW/°C
Power Dissipation at TA=25°C, mounted on aluminum substrate Derate above 25°C, Note 2	PD	300 2.4	mW mW/°C
Thermal Resistance, junction to ambient junction to lead	RθJA RθJL	556 417	°C/W
Operating Junction Temperature Range	TJ	-55 ~ +150	°C
Storage Temperature Range	TSTG	-65 ~ +165	°C
Forward Voltage at IF=10mA	VF	0.9	Volt

Note 1. FR-5 with area 1.0x0.75x0.062" thick  
 2. Aluminum substrate with area 0.4x0.3x0.024" thick

- Vz: Reverse Zener Voltage @ IZT
- IZT: Reverse Current
- ZZT: Maximum Zener Impedance @ IZT
- IZK: Reverse Current
- ZZK: Maximum Zener Impedance @ IZK
- IR: Reverse Leakage Current @ VR
- VR: Reverse Voltage
- IF: Forward Current
- VF: Forward Voltage @ IF



Zener Voltage Regulation



## MAXIMUM RATING AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

Part No.	Marking Code	Electical Characteristics ( Ta=25°C)								Temp. Coefficient	
		Vz(Min)	Vz(Max)	IzT	ZzT	IzK	ZzK	IR(μA) Max.		at IZT (%/K)	
		(V)	(V)	(mA)	(Ω)	(mA)	(Ω)		VR(V)	Min.	Max.
BZD84-C2V7	KD1	2.50	2.90	5.0	83	1.0	500	20	1	-0.09	-0.04
BZD84-C3V0	KD2	2.80	3.20	5.0	95	1.0	500	10	1	-0.09	-0.03
BZD84-C3V3	KD3	3.10	3.50	5.0	95	1.0	500	5	1	-0.08	-0.03
BZD84-C3V6	KD4	3.40	3.80	5.0	95	1.0	500	3	1	-0.08	-0.03
BZD84-C3V9	KD5	3.70	4.10	5.0	95	1.0	500	3	1	-0.07	-0.03
BZD84-C4V3	KD6	4.00	4.60	5.0	95	1.0	500	3	1	-0.06	-0.01
BZD84-C4V7	KD7	4.40	5.00	5.0	78	1.0	500	2	2	-0.05	+0.02
BZD84-C5V1	KD8	4.80	5.40	5.0	60	1.0	480	1	2	-0.03	+0.04
BZD84-C5V6	KD9	5.20	6.00	5.0	40	1.0	400	3	2	-0.02	+0.06
BZD84-C6V2	KDA	5.80	6.60	5.0	10	1.0	200	2	4	-0.01	+0.07
BZD84-C6V8	KDB	6.40	7.20	5.0	8	1.0	150	1	4	+0.02	+0.07
BZD84-C7V5	KDC	7.00	7.90	5.0	7	1.0	50	0.7	5	+0.03	+0.07
BZD84-C8V2	KDD	7.70	8.70	5.0	7	1.0	50	0.5	5	+0.04	+0.07
BZD84-C9V1	KDE	8.50	9.60	5.0	10	1.0	50	0.2	6	+0.05	+0.08
BZD84-C10	KDF	9.40	10.60	5.0	15	1.0	70	0.1	7	+0.05	+0.08
BZD84-C11	KDG	10.40	11.60	5.0	20	1.0	70	0.1	8	+0.05	+0.09
BZD84-C12	KDH	11.40	12.70	5.0	20	1.0	90	0.1	8	+0.06	+0.09
BZD84-C13	KDI	12.40	14.10	5.0	25	1.0	110	0.05	8	+0.07	+0.09
BZD84-C15	KDJ	13.80	15.60	5.0	30	1.0	110	0.05	10	+0.07	+0.09
BZD84-C16	KDL	15.30	17.10	5.0	40	1.0	170	0.05	11	+0.08	+0.095
BZD84-C18	KDM	16.80	19.10	5.0	50	1.0	170	0.05	13	+0.08	+0.095
BZD84-C20	KDN	18.80	21.20	5.0	50	1.0	220	0.05	14	+0.08	+0.1
BZD84-C22	KDO	20.80	23.30	5.0	55	1.0	220	0.05	15	+0.08	+0.1
BZD84-C24	KDP	22.80	25.60	5.0	80	1.0	220	0.05	17	+0.08	+0.1
BZD84-C27	KDQ	25.10	28.90	2.5	80	0.5	250	0.05	19	+0.08	+0.1
BZD84-C30	KDR	28.00	32.00	2.5	80	0.5	250	0.05	21	+0.08	+0.1
BZD84-C33	KDS	31.00	35.00	2.5	80	0.5	250	0.05	23	+0.08	+0.1
BZD84-C36	KDT	34.00	38.00	2.5	90	0.5	250	0.05	25	+0.08	+0.1
BZD84-C39	D30	37.00	41.00	2.5	90	0.5	300	0.05	27	+0.1	+0.12
BZD84-C43	D31	40.00	46.00	2.5	100	0.5	700	0.05	30	+0.1	+0.12
BZD84-C47	KDK	44.00	50.00	2.5	100	0.5	750	0.05	33	+0.1	+0.12
BZD84-C51	D32	48.00	54.00	2.5	100	0.5	750	0.05	36	+0.1	+0.12

• The type number listed have zener voltages minimum & maximum limits as shown and have a standard tolerance on the nominal zener voltage 5%  
 • Zener voltage is measured with a pulse test current (Iz) applied at an ambient temperature 25°C.  
 • Test with pulses, 300μs pulse width, 2% duty cycle



Fig. 1A - Zener Voltage vs Zener Current Curve

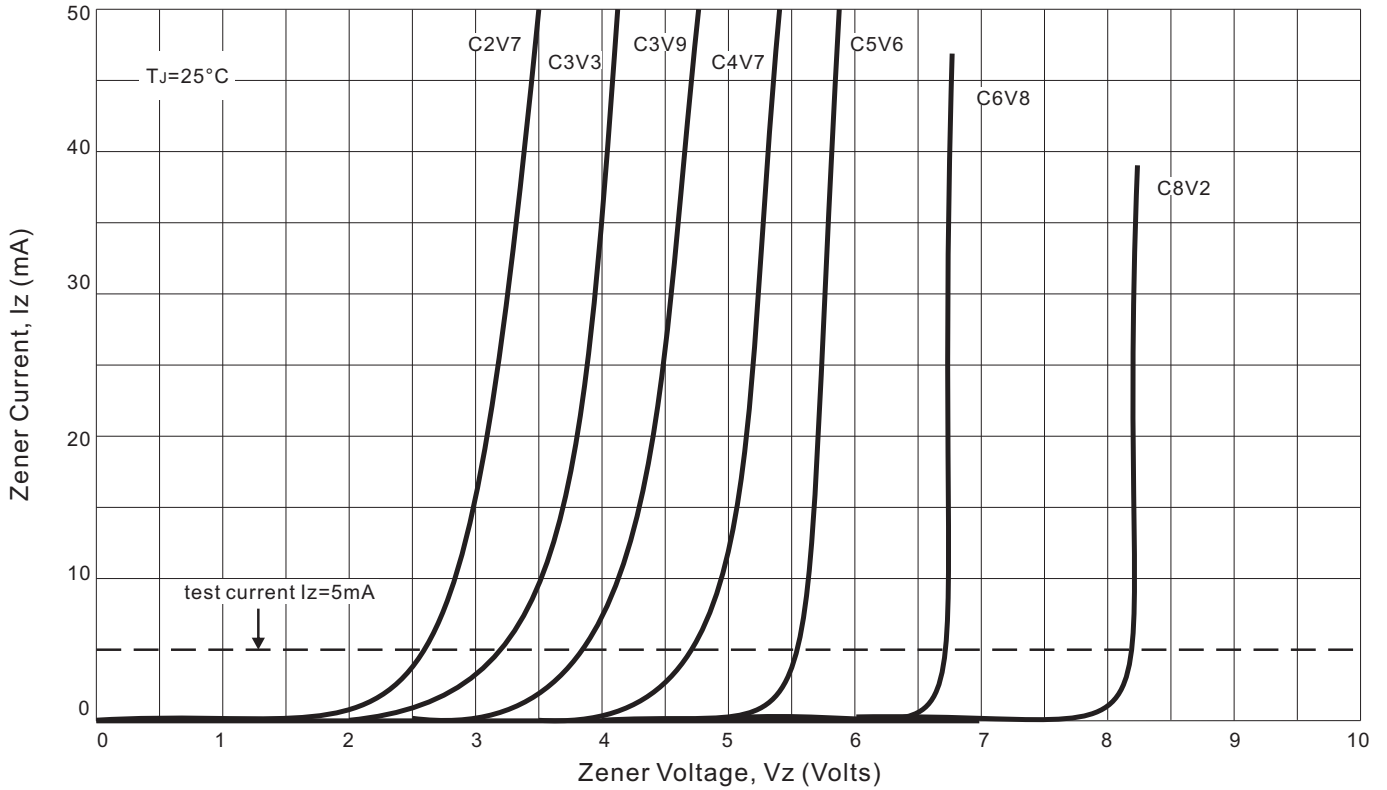


Fig. 1B - Zener Voltage vs Zener Current Curve

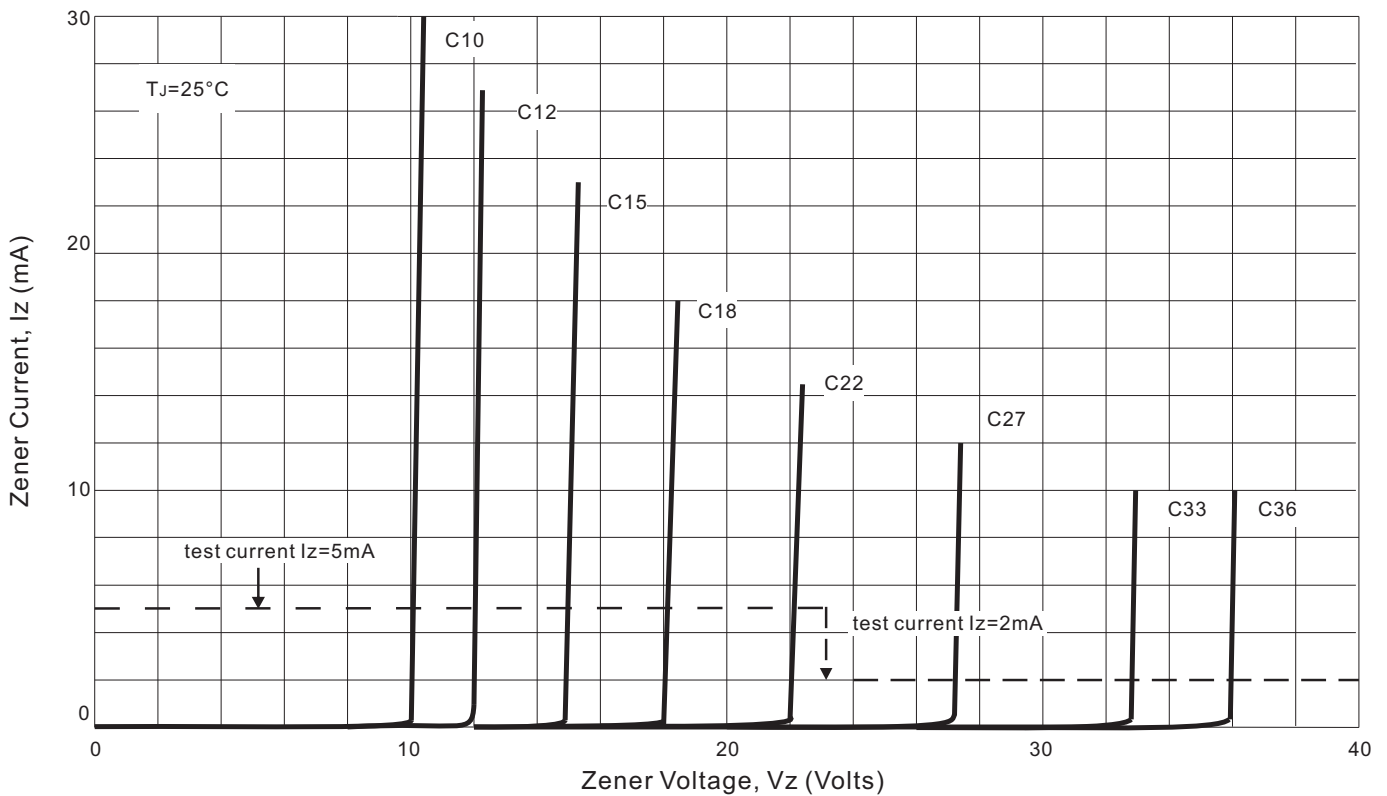




Fig. 1C - Zener Voltage vs Zener Current Curve

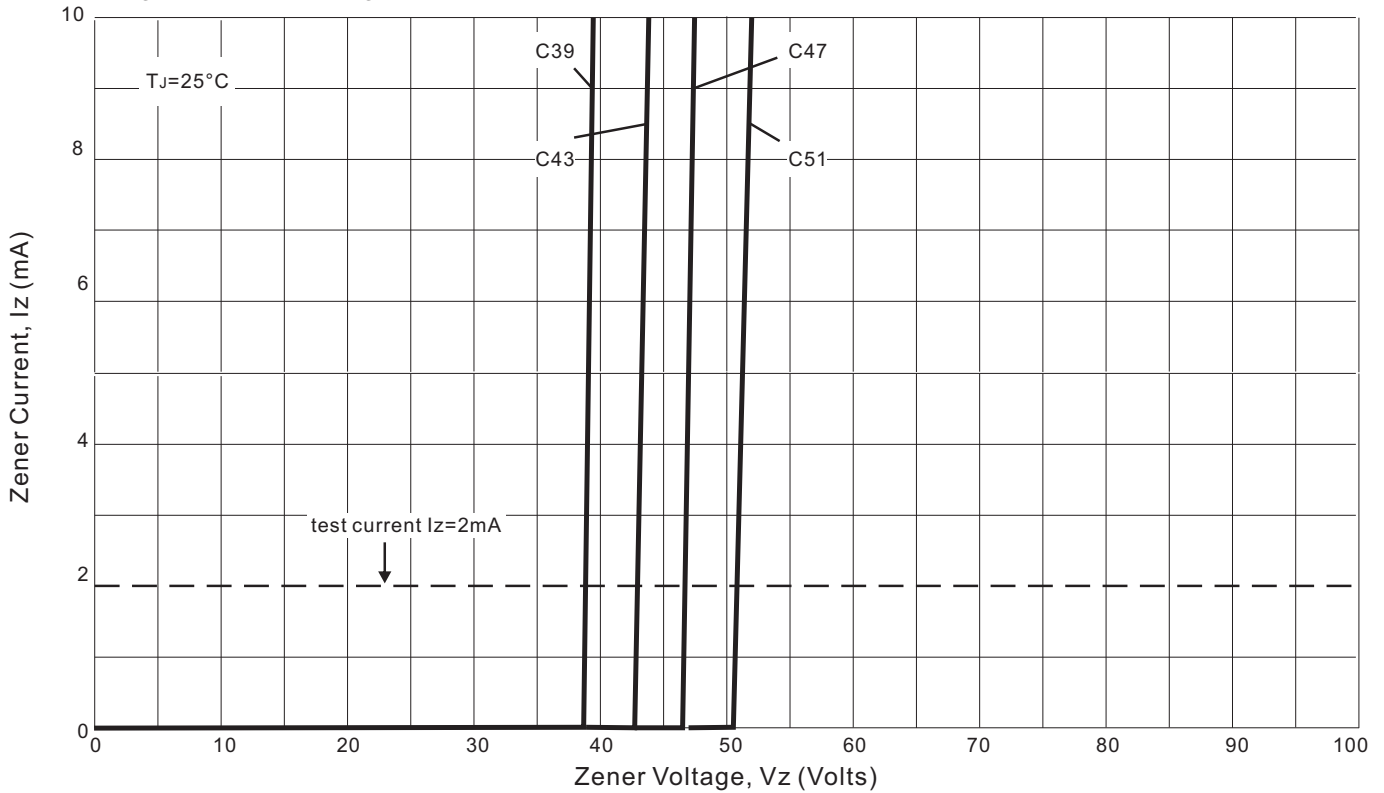


Fig. 2A - Dynamic Resistance Curve

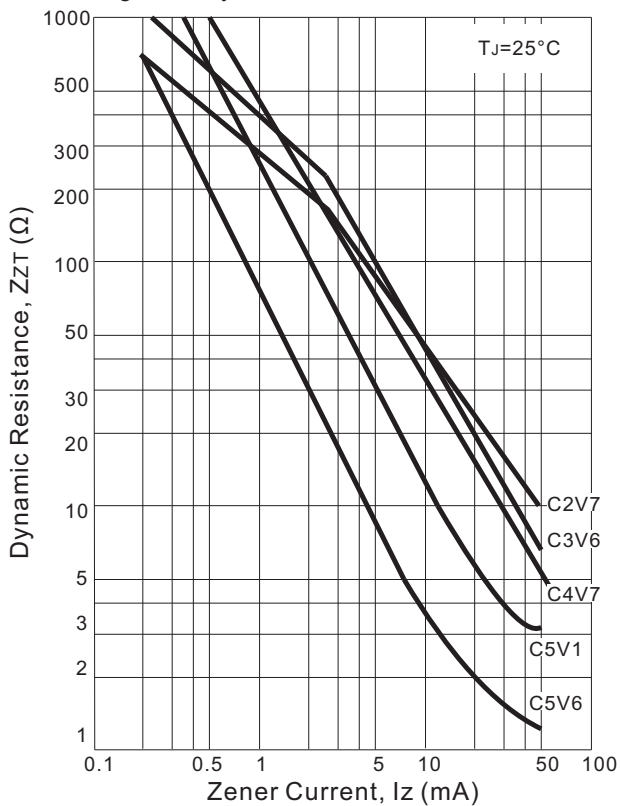
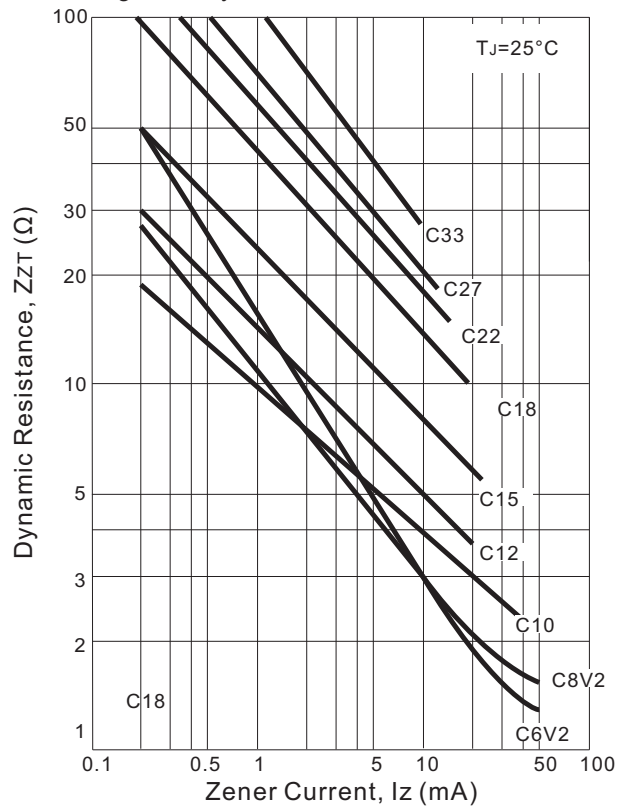
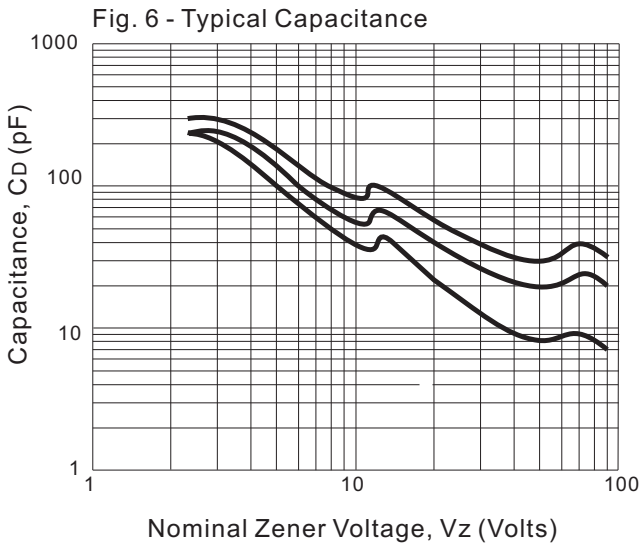
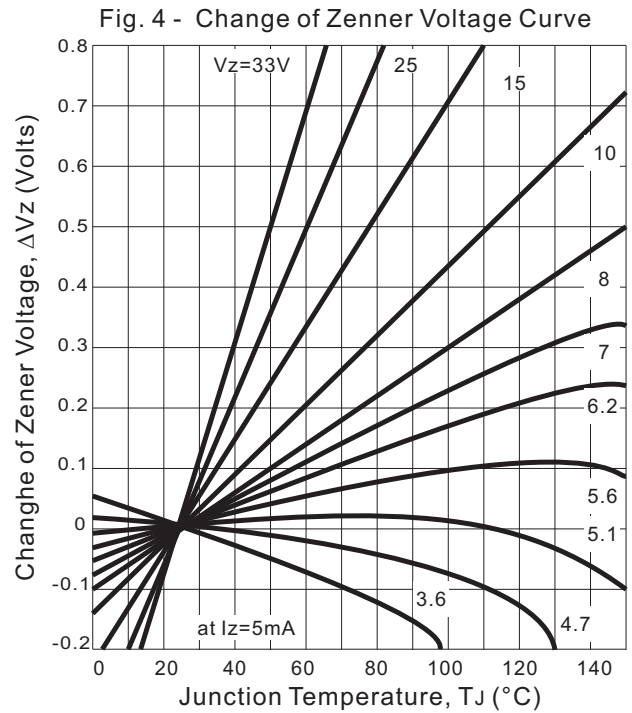
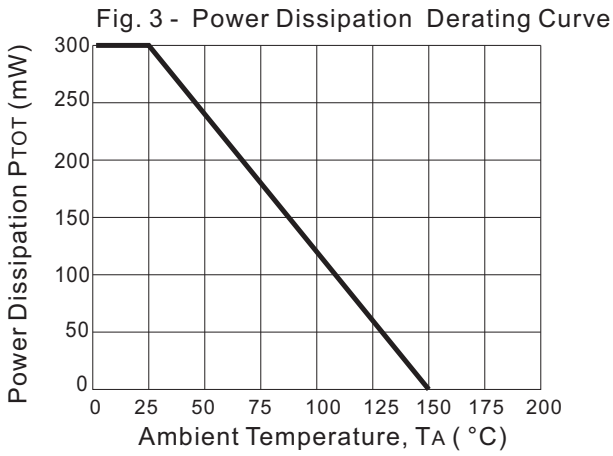


Fig. 2B - Dynamic Resistance Curve





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

