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TPZxxxC-1006 Series

SOD882 Surface Mount Zener Voltage Regulators

www.sot23.com.tw

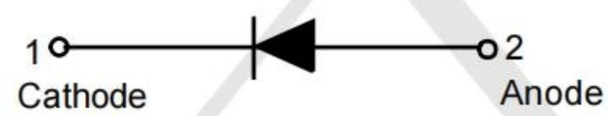
Specification Features:

- High Speed Switching
- Small Surface Mounting Type (DFN1006)
- RoHS Compliant
- Green EMC
- Matte Tin(Sn) Lead Finish
- Band Indicates Cathode
- Weight: approx. 0.001g

Mechanical Characteristics:

CASE: Void-free, transfer-molded, thermosetting plastic Epoxy Meets UL 94 V–0
LEAD FINISH: 100% Matte Sn (Tin)
MOUNTING POSITION: Any
QUALIFIED MAX REFLOW TEMPERATURE: 260°C
Device Meets MSL 1 Requirements

SOD882 Package



Absolute Maximum Ratings

T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
P_D	Power Dissipation	200	mW
T_{STG}	Storage Temperature Range	-55 to +150	°C
T_J	Operating Junction Temperature	+150	°C

These ratings are limiting values above which the serviceability of the diode may be impaired.

Electrical Characteristics

T_A = 25°C unless otherwise noted

Device Type	V_Z @ I_{ZT} (Volts)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_{ZK} (mA)	Z_{ZK} @ I_{ZK} (Ω) Max	I_R @ V_R (μA) Max	V_R (Volts)
	Min	Nom	Max						
TPZ2V0C-1006	1.90	2.0	2.10	5	100	1	564	120	0.5
TPZ2V2C-1006	2.09	2.2	2.31	5	100	1	564	120	0.7
TPZ2V4C-1006	2.2	2.4	2.6	5	100	1	1000	50	1
TPZ2V7C-1006	2.5	2.7	2.9	5	100	1	1000	20	1
TPZ3V0C-1006	2.8	3.0	3.2	5	100	1	1000	10	1
TPZ3V3C-1006	3.1	3.3	3.5	5	95	1	1000	5	1
TPZ3V6C-1006	3.4	3.6	3.8	5	90	1	1000	5	1
TPZ3V9C-1006	3.7	3.9	4.1	5	90	1	1000	3	1
TPZ4V3C-1006	4.0	4.3	4.6	5	90	1	1000	3	1
TPZ4V7C-1006	4.4	4.7	5.0	5	80	1	800	3	2
TPZ5V1C-1006	4.8	5.1	5.4	5	60	1	500	2	2
TPZ5V6C-1006	5.2	5.6	6.0	5	40	1	200	1	2
TPZ6V2C-1006	5.8	6.2	6.6	5	10	1	100	3	4
TPZ6V8C-1006	6.4	6.8	7.2	5	15	1	160	2	4
TPZ7V5C-1006	7.0	7.5	7.9	5	15	1	160	1	5
TPZ8V2C-1006	7.7	8.2	8.7	5	15	1	160	0.7	5
TPZ9V1C-1006	8.5	9.1	9.6	5	15	1	160	0.2	7
TPZ10VC-1006	9.4	10	10.6	5	20	1	160	0.1	8
TPZ11VC-1006	10.4	11	11.6	5	20	1	160	0.1	8
TPZ12VC-1006	11.4	12	12.7	5	25	1	80	0.1	8
TPZ13VC-1006	12.4	13	14.1	5	30	1	80	0.1	8

Electrical Characteristics T_A = 25°C unless otherwise noted

Device Type	V_Z @ I_{ZT} (Volts)			I_{ZT} (mA)	Z_{ZT} @ I_{ZT} (Ω) Max	I_{ZK} (mA)	Z_{ZK} @ I_{ZK} (Ω) Max	I_R @ V_R (μA) Max	V_R (Volts)
	Min	Nom	Max						
TPZ15VC-1006	14.3	15	15.8	5	30	1	80	0.05	10.5
TPZ16VC-1006	15.3	16	17.1	5	40	1	80	0.05	11.2
TPZ18VC-1006	16.8	18	19.1	5	45	1	80	0.05	12.6
TPZ20VC-1006	18.8	20	21.2	5	55	1	100	0.05	14
TPZ22VC-1006	20.8	22	23.3	5	55	1	100	0.05	15.4
TPZ24VC-1006	22.8	24	25.6	5	70	1	120	0.05	16.8
TPZ27VC-1006	25.1	27	28.9	2	80	0.5	300	0.05	18.9
TPZ30VC-1006	28	30	32	2	80	0.5	300	0.05	21
TPZ33VC-1006	31	33	35	2	80	0.5	300	0.05	23.2
TPZ36VC-1006	34	36	38	2	90	0.5	500	0.05	25.2
TPZ39VC-1006	37	39	41	2	130	0.5	500	0.05	27.3
TPZ43VC-1006	40	43	46	2	150	0.5	500	0.05	30.1
TPZ47VC-1006	44	47	50	2	170	0.5	500	0.05	32.9
TPZ51VC-1006	48	51	54	2	180	0.5	500	0.05	35.7
TPZ56VC-1006	52	56	60	2	200	0.5	500	0.05	39.2
TPZ62VC-1006	58	62	66	2	215	0.5	500	0.05	43.4
TPZ68VC-1006	64	68	72	2	240	0.5	500	0.05	47.6
TPZ75VC-1006	70	75	79	2	255	0.5	500	0.05	52.5

V_F Forward Voltage = 1 V Maximum @ I_F = 10 mA for all types

Notes:

1. The Zener Voltage (V_Z) is tested under pulse condition of 10mS.
2. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances, contact your nearest Tak Cheong Electronics representative.
3. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current (I_{ZT} or I_{ZK}) is superimposed to I_{ZT} or I_{ZK}.

RATING AND CHARACTERISTIC CURVES

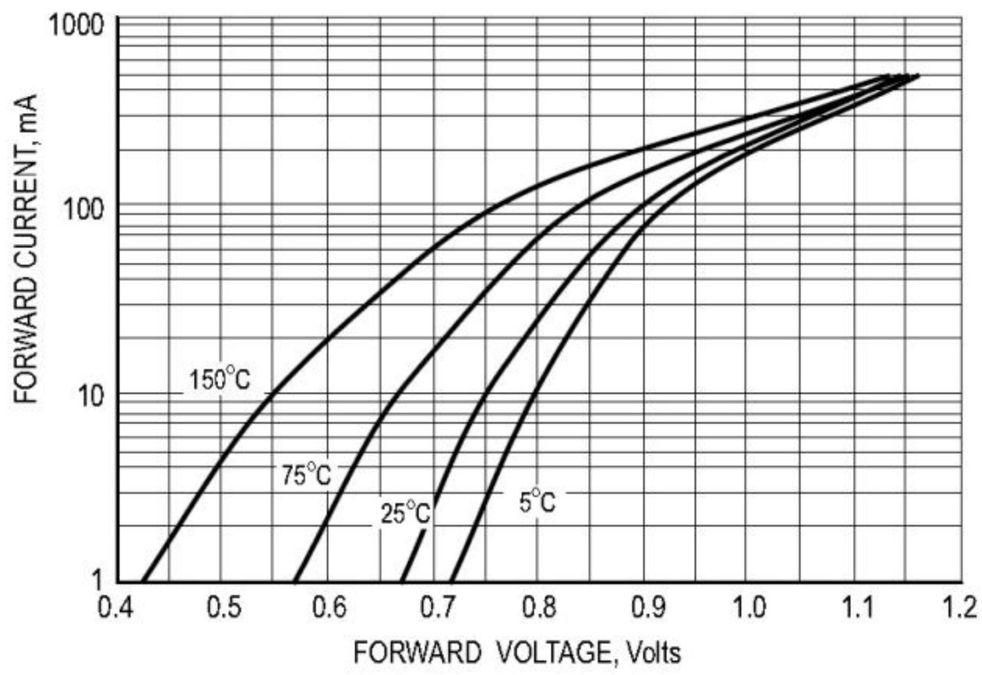


Fig.1 TYPICAL FORWARD VOLTAGE

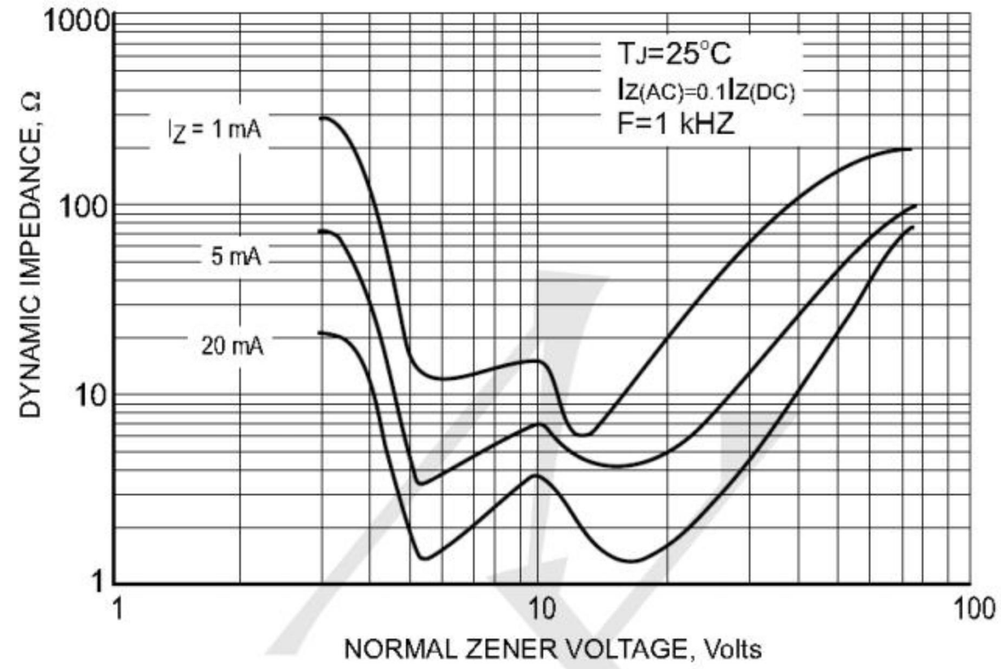


Fig.2 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

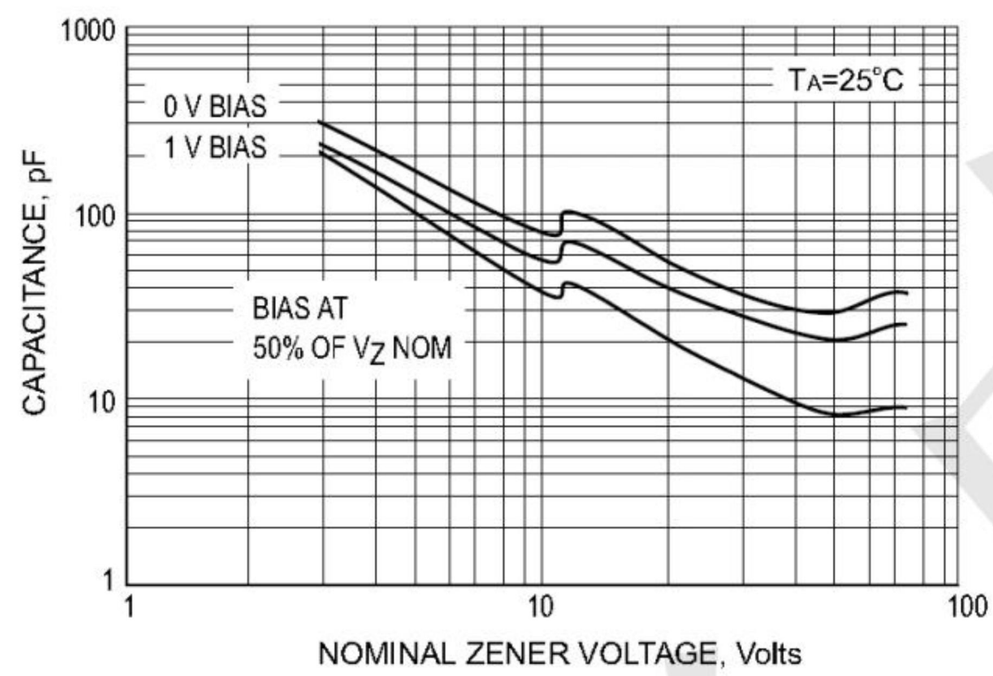


Fig.4 TYPICAL CAPACITANCE

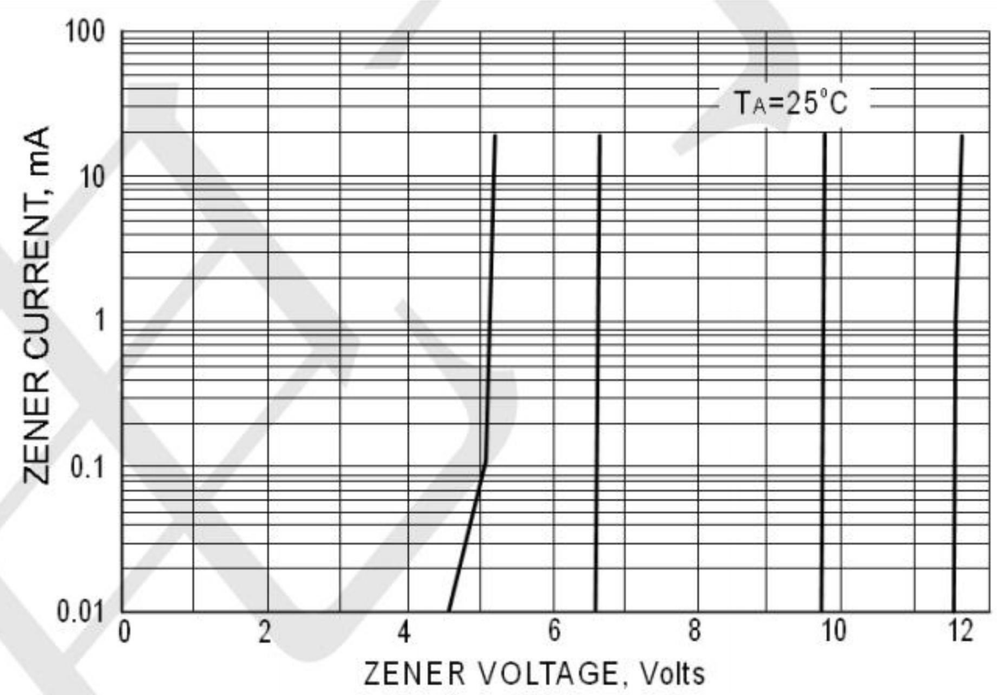


Fig.5 ZENER BREAKDOWN CHARACTERISTICS

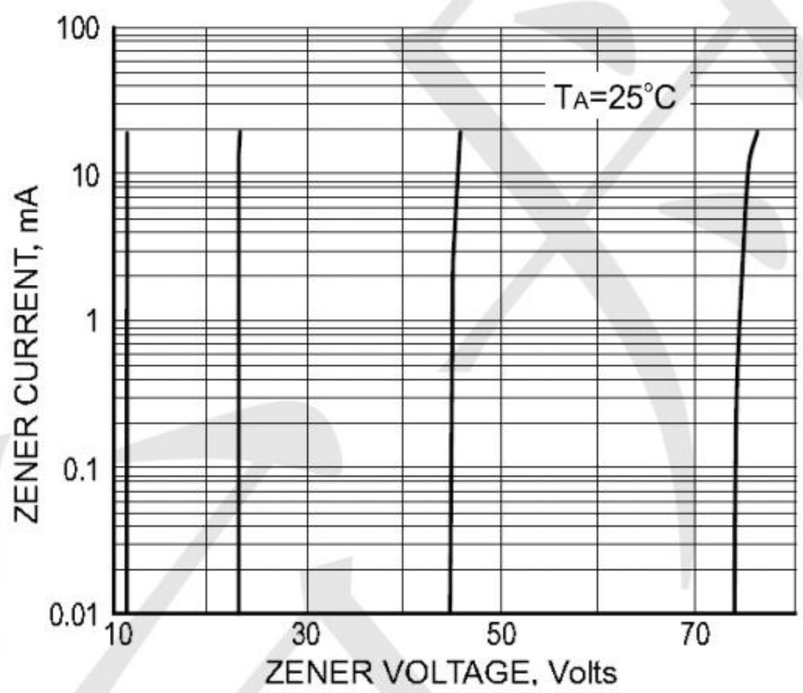


Fig.6 ZENER BREAKDOWN CHARACTERISTICS

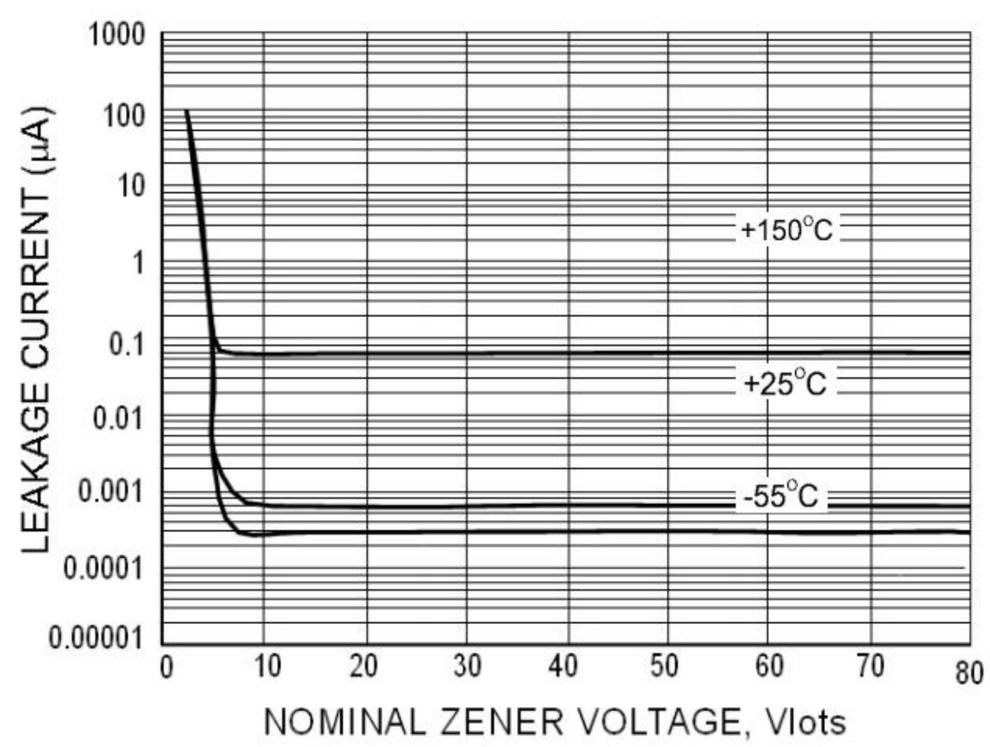
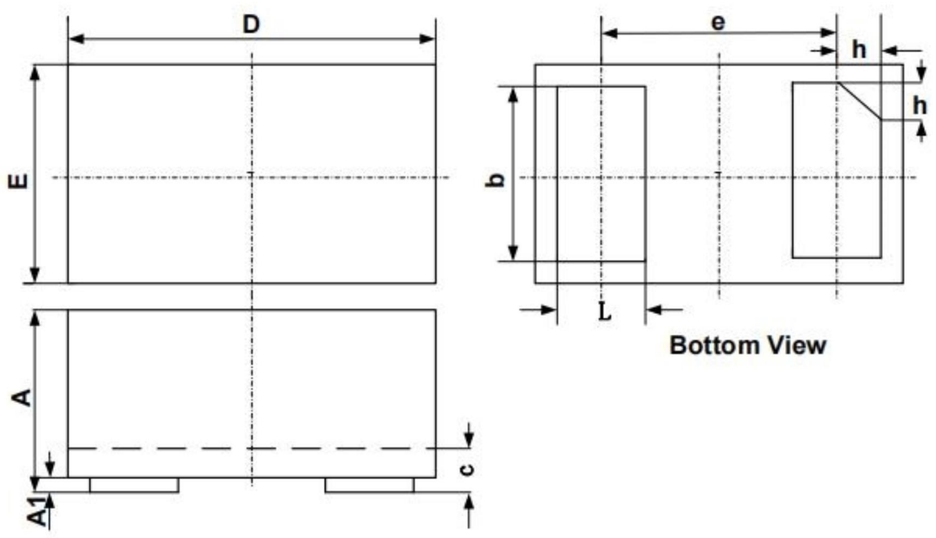


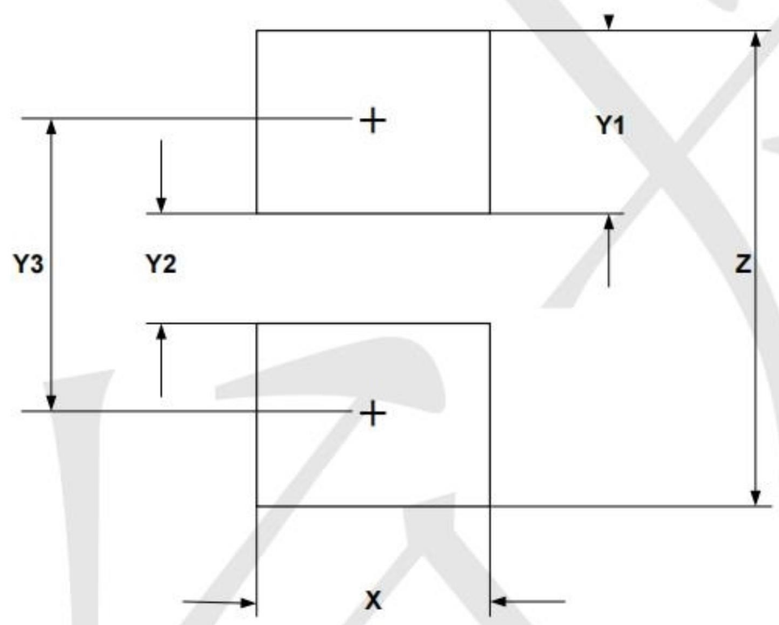
Fig.7 TYPICAL LEAKGE CURRENT

DFN1006-2 Package Outline Drawing (0402)



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.45	0.50	0.55	0.018	0.020	0.022
c	0.12	0.15	0.18	0.005	0.006	0.007
D	0.95	1.00	1.05	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052