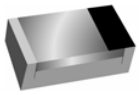
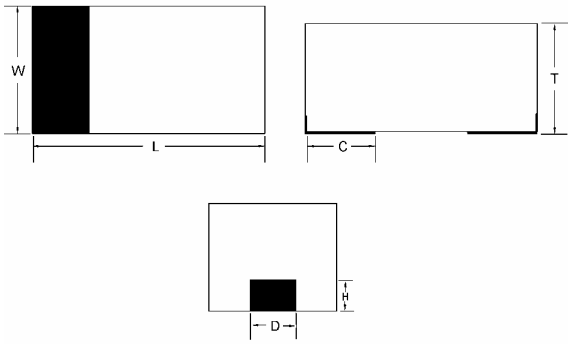
TSZU52C2V4 – TSZU52C39

150mW SMD Zener Diode

0603





Features

- ✧ 150mW Power dissipation.
- ✧ High voltages from 2 ~ 39V
- ✧ Designed for mounting on small surface
- ✧ Extremely thin/leadless package
- ✧ Pb free product

Mechanical Data

- ✧ Cases: 0603 standard package, molded plastic
- ✧ Terminals: Gold plated, solderable per
- ✧ MIL-STD-750, method 2026,
- ✧ Polarity: Indicated by cathode band
- ✧ Weight: 0.003 gram (approximately)

Item	0603
L	0.071(1.80) 0.063(1.60)
W	0.039(1.00) 0.031(0.80)
T	0.033(0.85) 0.027(0.70)
C	0.014(0.35) Typical
D	0.018(0.45) Typical
H	0.012(0.30) Typ.

Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	Value	Units
Maximum Forward Voltage Drop at I_F=10mA	V_F	0.9	V
Maximum Power Dissipation	Pd	150	mW
Forward Current, Surge Peak 8.3ms Single half Sine-Wave superimposed on Rate Load (JEDEC method)	I_{FSM}	2.0	A
Operating Junction and Storage Temperature Range	T_{STG}, T_J	-65 to +125	°C

Version: A07

TAIWAN SEMICONDUCTOR

RATINGS AND CHARACTERISTIC CURVES (TSZU52C2 THRU TSZU52C39)

Fig.1 TEMPERATURE COEFFICENTS

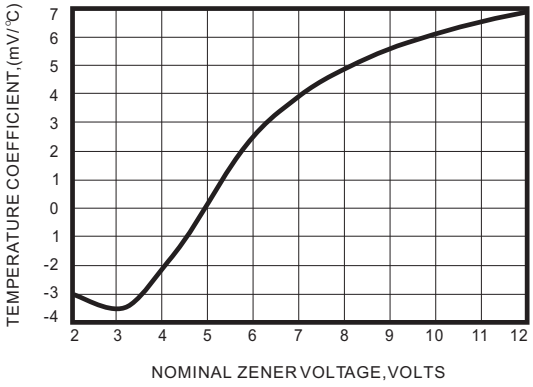


Fig.2 TEMPERATURE COEFFICENTS

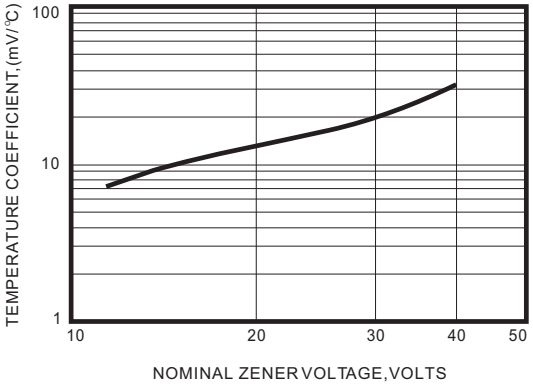


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

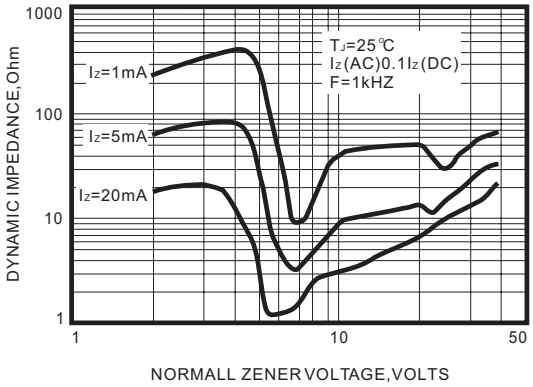


Fig.4 TYPICAL FORWARD VOLTAGE

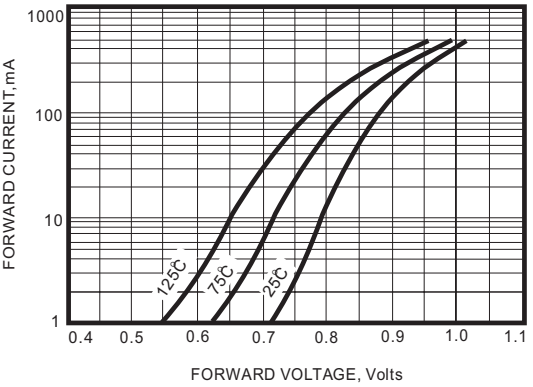


Fig.5 TYPICAL LEAKAGE CURRENT

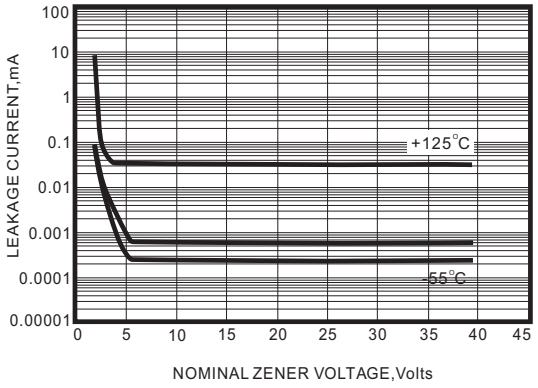
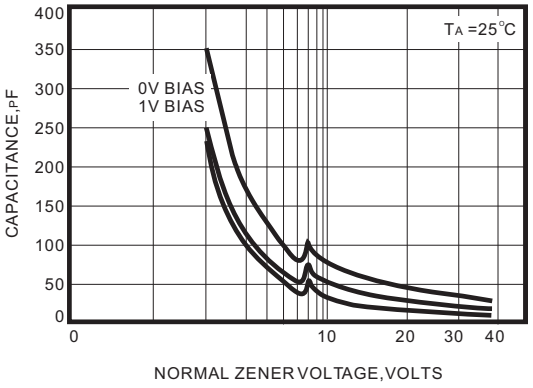


Fig.6 TYPICAL CAPACITANCE



RATINGS AND CHARACTERISTIC CURVES (TSZU52C2 THRU TSZU52C39)

Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

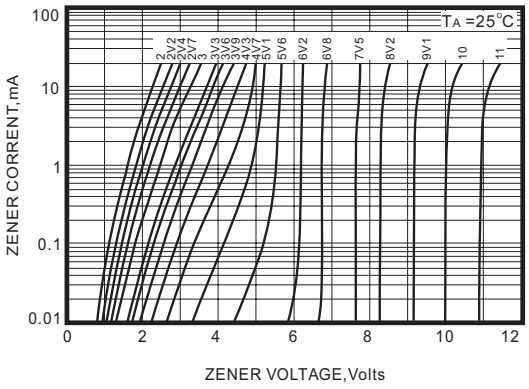


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

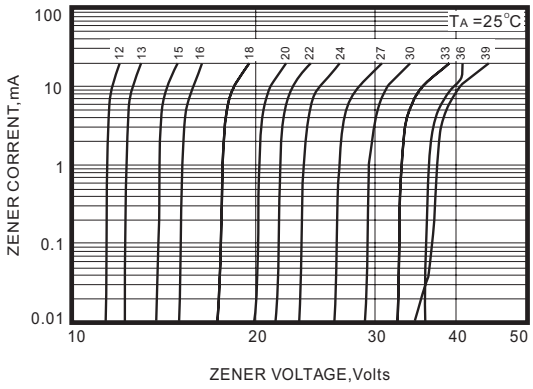
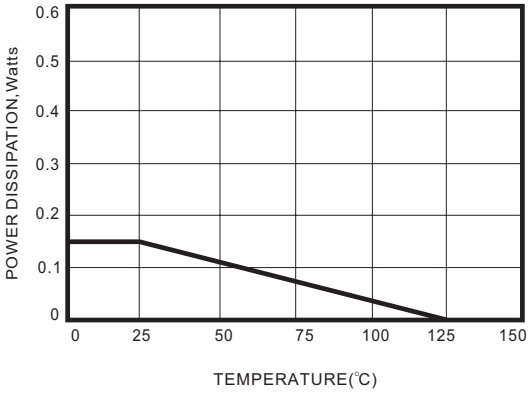


Fig.9 STEADY STATE POWER DERATING



ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device	Device Marking Code	Zener Voltage V_Z(V)			Operating Resistance		Rising Operating Resistance		Reverse Current	
					ZZT(Ohm)		ZZK(Ohm)		$I_{R(uA)}$	
		Min	Max	I_Z(mA)	Max	I_Z(mA)	Max	I_Z(mA)	Max	V_R(V)
TSZU52C2V4	Z2	2.28	2.52	5	85	5	600	1	100	1.0
TSZU52C2V7	Z3	2.57	2.84	5	83	5	500	1	75	1.0
TSZU52C3V0	Z4	2.85	3.15	5	95	5	500	1	50	1.0
TSZU52C3V3	Z5	3.14	3.47	5	95	5	500	1	25	1.0
TSZU52C3V6	Z6	3.42	3.78	5	95	5	500	1	15	1.0
TSZU52C3V9	Z7	3.71	4.10	5	95	5	500	1	10	1.0
TSZU52C4V3	Z8	4.09	4.52	5	95	5	500	1	5.0	1.0
TSZU52C4V7	Z9	4.47	4.94	5	78	5	500	1	5.0	2.0
TSZU52C5V1	ZA	4.85	5.36	5	60	5	480	1	0.1	0.8
TSZU52C5V6	ZB	5.32	5.88	5	40	5	400	1	0.1	1.0
TSZU52C6V2	ZC	5.89	6.51	5	10	5	200	1	0.1	2.0
TSZU52C6V8	ZE	6.46	7.14	5	8	5	150	1	0.1	3.0
TSZU52C7V5	ZF	7.13	7.88	5	7	5	50	1	0.1	5.0
TSZU52C8V2	ZG	7.79	8.61	5	7	5	50	1	0.1	6.0
TSZU52C9V1	ZH	8.65	9.56	5	10	5	50	1	0.1	7.0
TSCU52C10	ZJ	9.50	10.50	5	15	5	70	1	0.1	7.5
TSZU52C11	ZK	10.45	11.55	5	20	5	70	1	0.1	8.5
TSZU52C12	ZM	11.40	12.60	5	20	5	90	1	0.1	9.0
TSZU52C13	ZN	12.35	13.65	5	25	5	110	1	0.1	10
TSZU52C15	ZP	14.25	15.75	5	30	5	110	1	0.1	11
TSZU52C16	ZQ	15.20	16.80	5	40	5	170	1	0.1	12
TSZU52C18	ZR	17.10	18.90	5	50	5	170	1	0.1	14
TSZU52C20	ZS	19.00	21.00	5	50	5	220	1	0.1	15
TSZU52C22	ZT	20.90	23.10	5	55	5	220	1	0.1	17
TSZU52C24	ZU	22.80	25.20	5	80	5	220	1	0.1	18
TSZU52C27	ZV	25.65	28.35	5	80	5	250	1	0.1	20
TSZU52C30	ZW	28.50	31.50	5	80	5	250	1	0.1	23
TSZU52C33	ZX	31.35	34.65	5	80	5	250	1	0.1	25
TSZU52C36	ZY	34.20	37.80	5	90	5	250	1	0.1	27
TSZU52C39	ZZ	37.05	40.95	5	90	5	300	1	0.1	29