

# TSZL52C2V4 – TSZL52C39

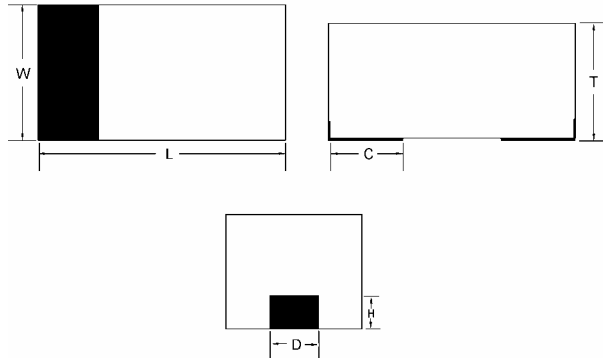
## 200mW SMD Zener Diode



**1005**

### Features

- ✧ 200mW Power dissipation.
- ✧ High voltages from 2 ~ 39V
- ✧ Designed for mounting on small surface
- ✧ Extremely thin/leadless package
- ✧ Pb free product



### Mechanical Data

- ✧ Cases: 1005 standard package, molded plastic
- ✧ Terminals: Gold plated, solderable per MIL-STD-750, method 2026,
- ✧ Polarity: Indicated by cathode band
- ✧ Weight: 0.006gram (approximately)

Item	1005
L	0.102(2.60) 0.095(2.40)
W	0.051(1.30) 0.043(1.10)
T	0.035(0.90) 0.027(0.70)
C	0.020(0.50) Typical
D	0.020(0.50) Typical
H	0.012(0.30) Typ.

Dimensions in inches and (millimeters)

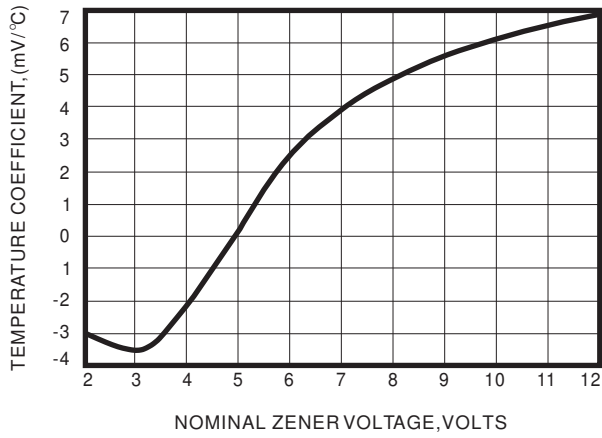
### Maximum Ratings and Electrical Characteristics

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%

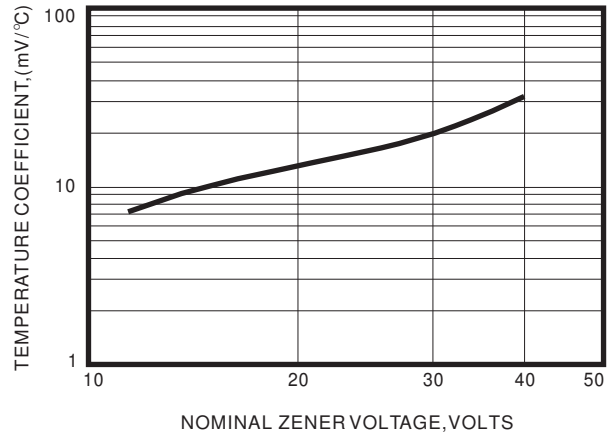
Type Number	Symbol	Value	Units
Maximum Forward Voltage Drop at $I_F=10\text{mA}$	$V_F$	0.9	V
Maximum Power Dissipation	$P_d$	200	mW
Forward Current, Surge Peak 8.3ms Single half Sine-Wave superimposed on Rate Load (JEDEC method)	$I_{FSM}$	2.0	A
Operating Junction and Storage Temperature Range	$T_{STG}, T_J$	-65 to +125	°C

**RATINGS AND CHARACTERISTIC CURVES (TSZL52C2 THRU TSZL52C39)**

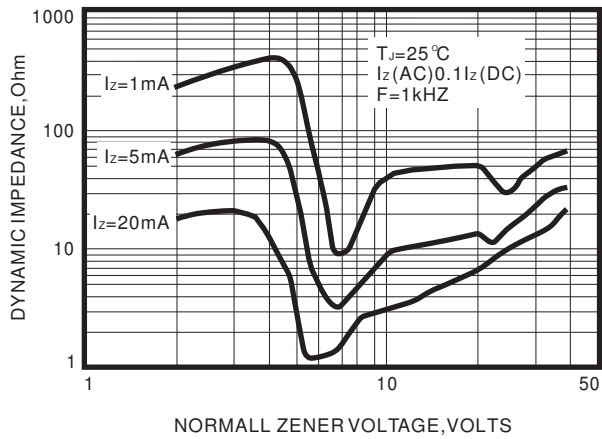
**Fig.1 TEMPERATURE COEFFICIENTS**



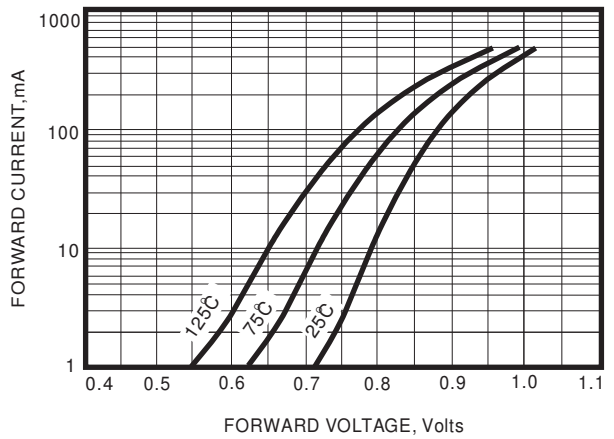
**Fig.2 TEMPERATURE COEFFICIENTS**



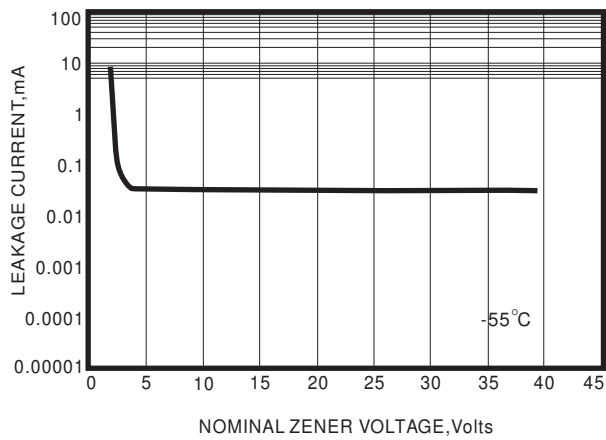
**Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE**



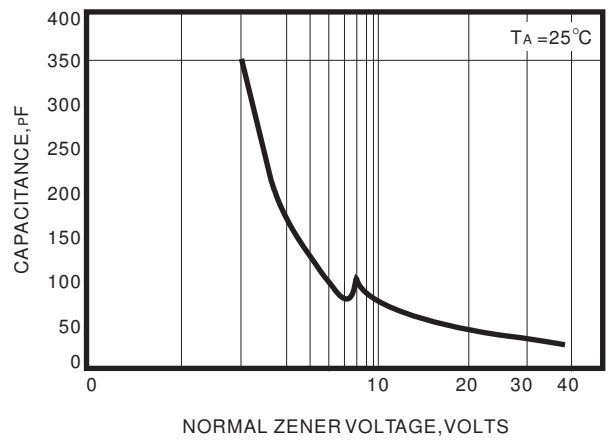
**Fig.4 TYPICAL FORWARD VOLTAGE**



**Fig.5 TYPICAL LEAKAGE CURRENT**



**Fig.6 TYPICAL CAPACITANCE**



RATINGS AND CHARACTERISTIC CURVES (TSZL52C2 THRU TSZL52C39)

Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

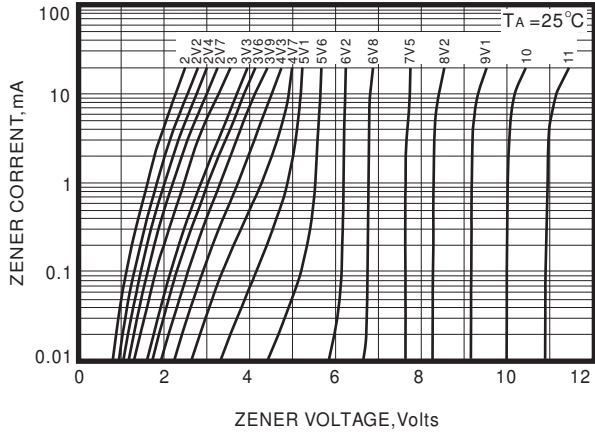


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

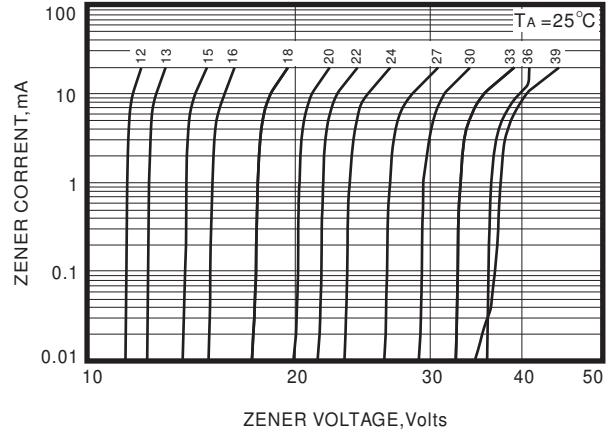
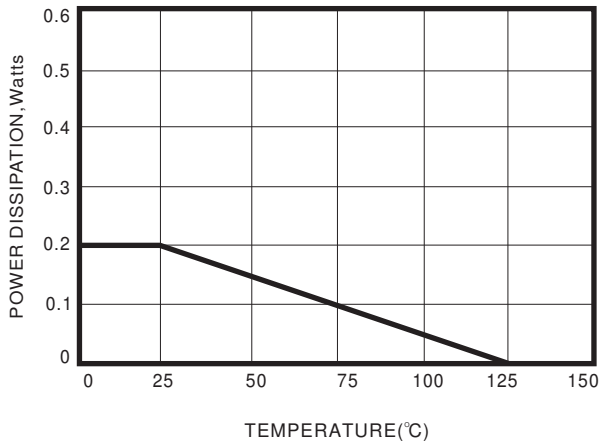


Fig.9 STEADY STATE POWER DERATING



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

Device	Device Marking Code	Zener Voltage			Operating Resistance		Rising Operating Resistance		Reverse Current	
		V <sub>Z</sub> (V)			ZZT(Ohm)		ZZK(Ohm)		I <sub>R</sub> ( $\mu$ A)	
		Min	Max	I <sub>Z</sub> (mA)	Max	I <sub>Z</sub> (mA)	Max	I <sub>Z</sub> (mA)	Max	V <sub>R</sub> (V)
TSZL52C2V4	Z2	2.28	2.52	5	85	5	600	1	100	1.0
TSZL52C2V7	Z3	2.57	2.84	5	83	5	500	1	75	1.0
TSZL52C3V0	Z4	2.85	3.15	5	95	5	500	1	50	1.0
TSZL52C3V3	Z5	3.14	3.47	5	95	5	500	1	25	1.0
TSZL52C3V6	Z6	3.42	3.78	5	95	5	500	1	15	1.0
TSZL52C3V9	Z7	3.71	4.10	5	95	5	500	1	10	1.0
TSZL52C4V3	Z8	4.09	4.52	5	95	5	500	1	5.0	1.0
TSZL52C4V7	Z9	4.47	4.94	5	78	5	500	1	5.0	2.0
TSZL52C5V1	ZA	4.85	5.36	5	60	5	480	1	0.1	0.8
TSZL52C5V6	ZB	5.32	5.88	5	40	5	400	1	0.1	1.0
TSZL52C6V2	ZC	5.89	6.51	5	10	5	200	1	0.1	2.0
TSZL52C6V8	ZE	6.46	7.14	5	8	5	150	1	0.1	3.0
TSZL52C7V5	ZF	7.13	7.88	5	7	5	50	1	0.1	5.0
TSZL52C8V2	ZG	7.79	8.61	5	7	5	50	1	0.1	6.0
TSZL52C9V1	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
TSZL52C11	ZK	10.45	11.55	5	20	5	70	1	0.1	8.5
TSZL52C12	ZM	11.40	12.60	5	20	5	90	1	0.1	9.0
TSZL52C13	ZN	12.35	13.65	5	25	5	110	1	0.1	10
TSZL52C15	ZP	14.25	15.75	5	30	5	110	1	0.1	11
TSZL52C16	ZQ	15.20	16.80	5	40	5	170	1	0.1	12
TSZL52C18	ZR	17.10	18.90	5	50	5	170	1	0.1	14
TSZL52C20	ZS	19.00	21.00	5	50	5	220	1	0.1	15
TSZL52C22	ZT	20.90	23.10	5	55	5	220	1	0.1	17
TSZL52C24	ZU	22.80	25.20	5	80	5	220	1	0.1	18
TSZL52C27	ZV	25.65	28.35	5	80	5	250	1	0.1	20
TSZL52C30	ZW	28.50	31.50	5	80	5	250	1	0.1	23
TSZL52C33	ZX	31.35	34.65	5	80	5	250	1	0.1	25
TSZL52C36	ZY	34.20	37.80	5	90	5	250	1	0.1	27
TSZL52C39	ZZ	37.05	40.95	5	90	5	300	1	0.1	29