

Small Signal Product

## SMD Zener Diode

### FEATURES

- Wide zener voltage range selection : 2.4V to 39V
- Designed for mounting on small surface
- Extremely thin / leadless package
- Packing code with suffix "G" means green compound (halogen-free)



1005



### MECHANICAL DATA

- Case: 1005
- Terminal: Gold plated, solderable per MIL-STD-750, method 2026
- Polarity : Indicated by cathode band
- Weight : 0.006 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Power Dissipation	P <sub>D</sub>	200	mW
Forward Voltage @ I <sub>F</sub> = 10mA	V <sub>F</sub>	0.9	V
Forward Current, Surge Peak 8.3 ms Single Half Sine-Wave Superimposed on Rate Load	I <sub>FSM</sub>	2	A
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +125	°C

Not Recommended

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 ELECTRICAL CHARACTERISTICS (  $T_A = 25^{\circ}\text{C}$  unless otherwise noted )

Device	Device Marking Code	Zener Voltage			Operating Resistance		Rising Operating Resistance		Reverse Current	
		$V_Z$ (Volt)			$Z_{ZT}$ (Ohm)		$Z_{ZK}$ (Ohm)		$I_R$ ( $\mu\text{A}$ )	
		Min	Max	$I_Z$ (mA)	Max	$I_Z$ (mA)	Max	$I_Z$ (mA)	Max	$V_R$ (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
TSZL52C10	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

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RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

Fig. 1 Temperature Coefficients

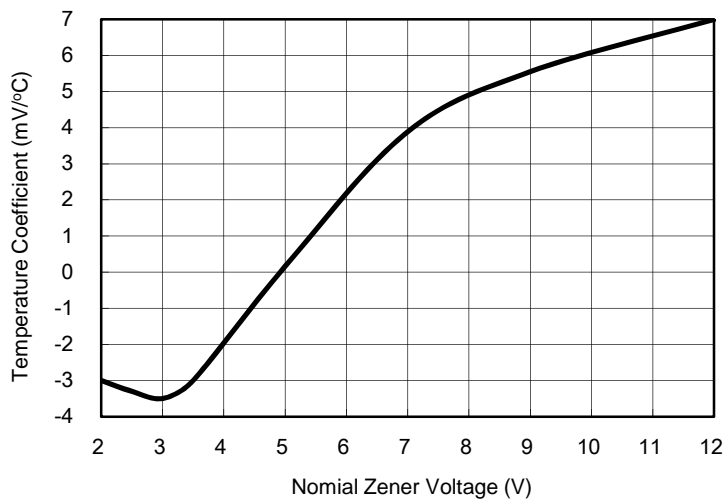


Fig. 2 Temperature Coefficient

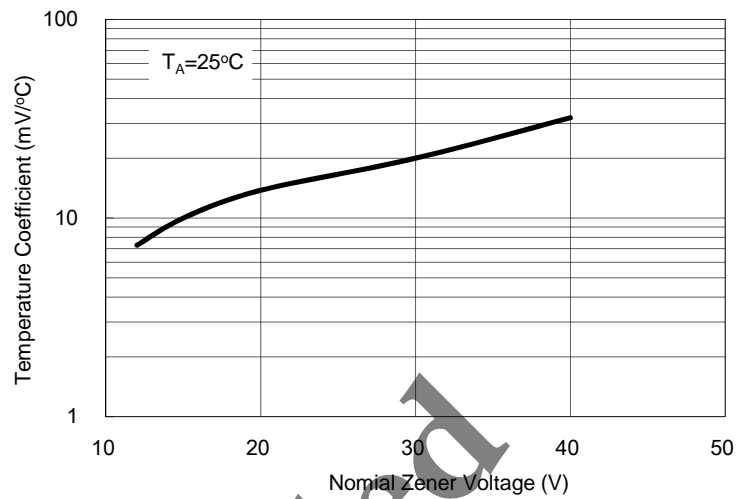


Fig. 3 Effect of Zener Voltage on Zener Impedance

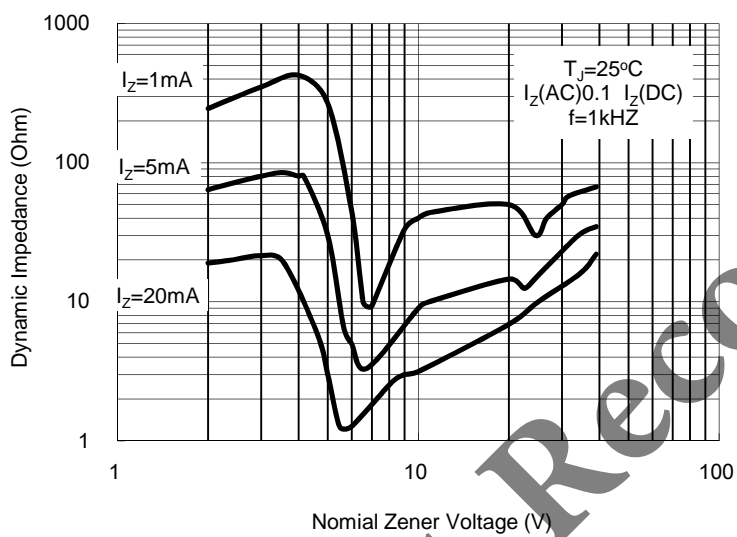


Fig. 4 Typical Forward Voltage

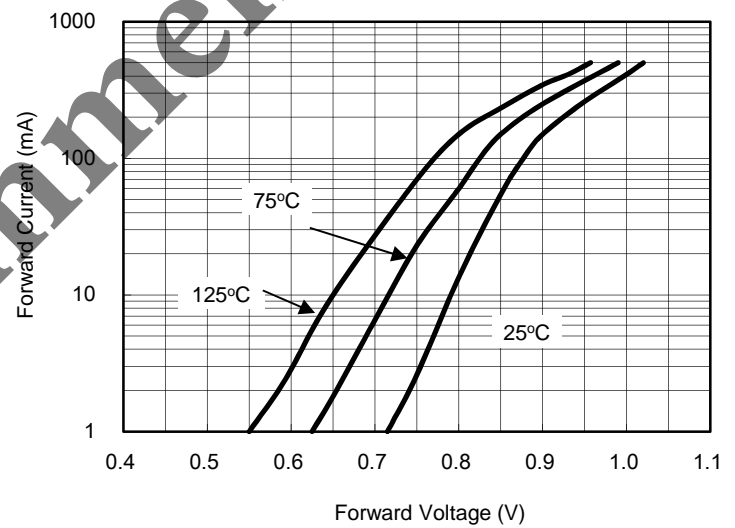


Fig. 5 Typical Leakage Current

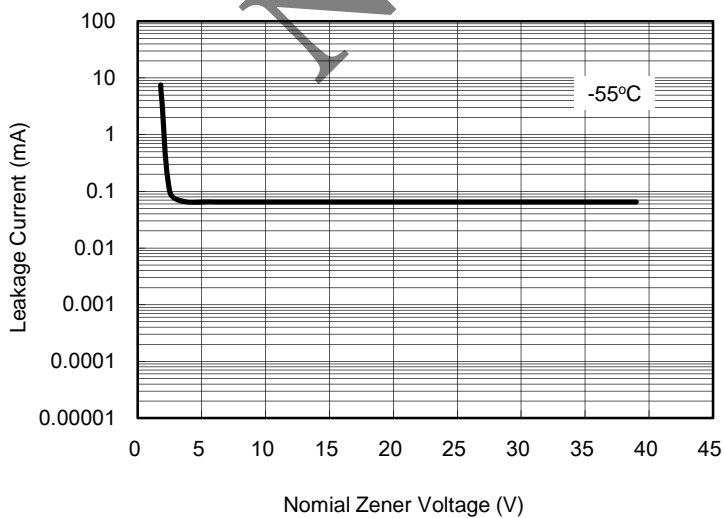
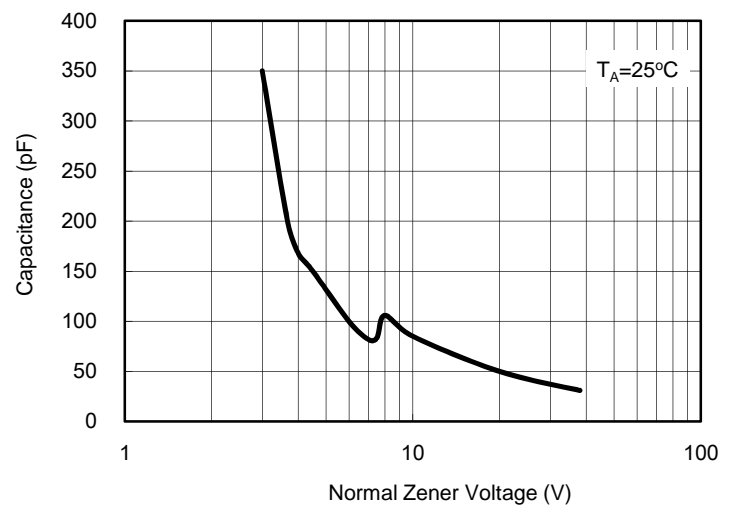


Fig. 6 Typical Capacitance



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Fig. 7 Zener Voltage VS. Zener Current

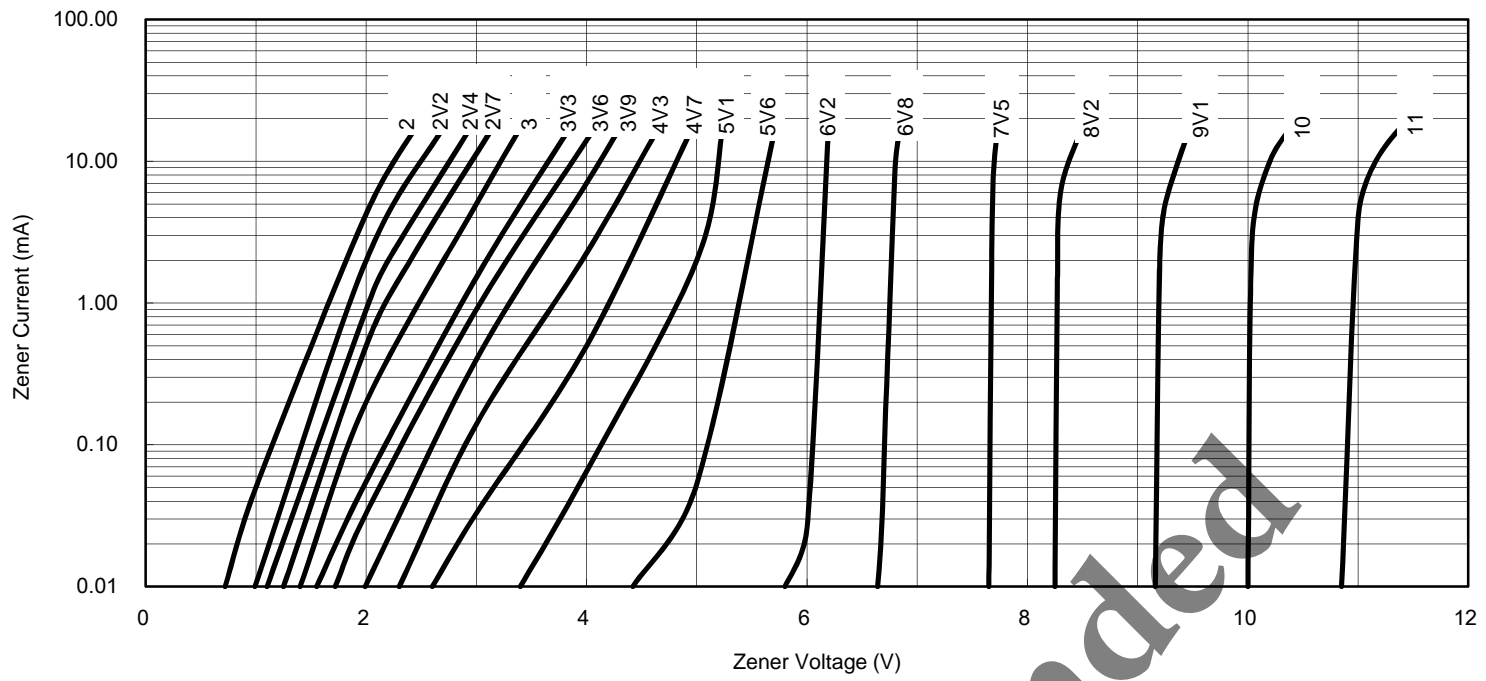


Fig. 8 Zener Voltage vs. Zener Current

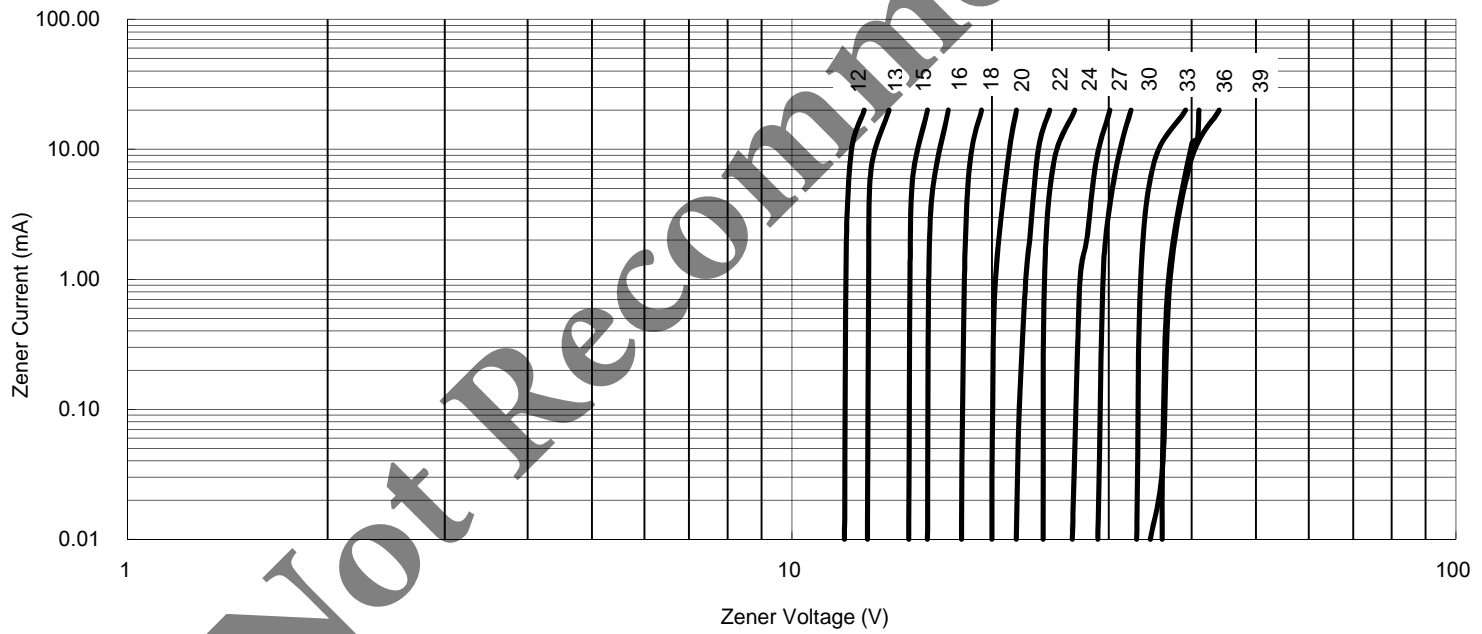
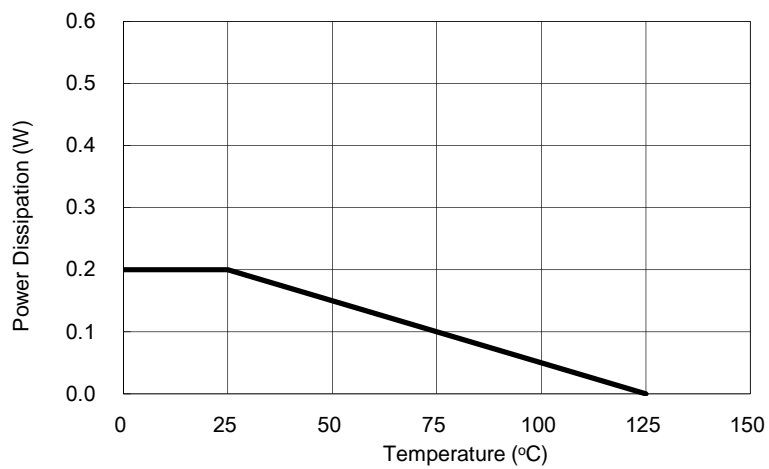


Fig. 9 Steady State Power Derating



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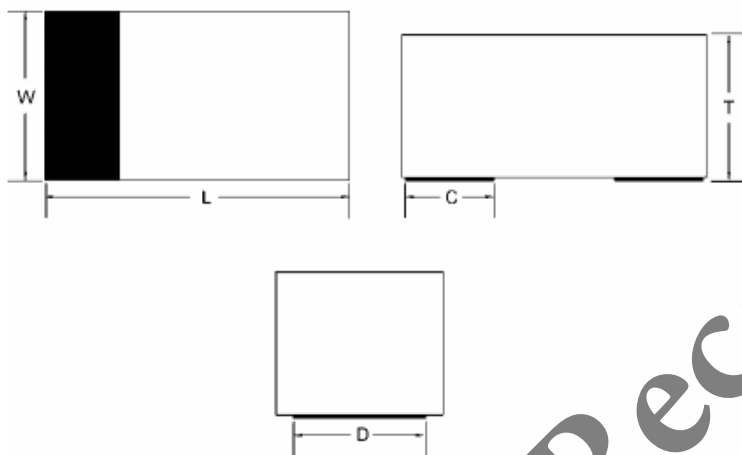
ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX (Note 2)	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
TSZL52Cxxx (Note1)	-xx	RW	G	1005	4K / 7" Reel

Note 1: "xxx" defines voltage from 2.4V (TSZL52C2V4) to 39V (TSZL52C39)

Note 2: Part No. Suffix „-xx “ would be used for special requirement

EXAMPLE					
PREFERRED P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TSZL52C39 RWG	TSZL52C39		RW	G	Multiple manufacture source Green compound
TSZL52C39-F0 RWG	TSZL52C39	-F0	RW	G	Define manufacture source Green compound

## PACKAGE OUTLINE DIMENSION

**1005**


DIM.	Unit (mm)			Unit (inch)		
	Min	Typ	Max	Min	Typ	Max
L	2.4	-	2.6	0.094	-	0.102
W	1.1	-	1.3	0.043	-	0.051
T	0.7	-	0.9	0.028	-	0.035
C	-	0.5	-	-	0.020	-
D	-	1.0	-	-	0.039	-

Not Recommended

**Not Recommended**

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