

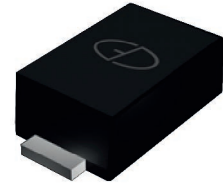
# **GSMF5913A thru GSMF5956A**

Surface Mount Zener Diodes

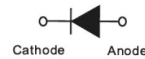
Vz Range: 3.3V to 200V Power Dissipation:1.5W

## **Features**

- Total power dissipation: Max. 1.5W
- Low leakage current
- Moisture sensitivity: level 1, per J-STD-020
- Solder dip 260°C, 10s
- Low profile, typical thickness 1.0mm
- For use in stabilizing and clipping circuits with high power rating



**Package: eSGA**  
(SOD-123FL)



**Schematic Diagram**

## **Absolute Maximum Ratings and Electrical Characteristics**

(T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Max	Unit
Forward Voltage (I <sub>F</sub> =200mA)	V <sub>F</sub>	1.5	V
Power Dissipation (T <sub>L</sub> =75°C)	P <sub>d</sub>	1.5	W
Zener Current	I <sub>Z</sub>	P <sub>V</sub> /V <sub>Z</sub>	mA
Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	170	°C/W
Thermal Resistance Junction to Lead	R <sub>θJL</sub>	25	°C/W
Operation Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

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## Electrical Characteristics (T<sub>A</sub>=25 °C unless otherwise noted)

Part Number	Nominal Zener Voltage @ I <sub>T</sub>			I <sub>ZT</sub> (mA)	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
	V <sub>Z</sub> Ave. (V)	V <sub>Z</sub> Min. (V)	V <sub>Z</sub> Max. (V)		Z <sub>ZT</sub> @ I <sub>ZT</sub> Max. (Ω)	Z <sub>ZK</sub> @ I <sub>ZK</sub> Max. (Ω)	I <sub>ZK</sub> (mA)	I <sub>R</sub> @ V <sub>R</sub> (uA)	V <sub>R</sub> (V)	
GSMF5913A	3.3	3.135	3.465	113.6	10	500.0	1.00	100.0	1.0	274.0
GSMF5914A	3.6	3.42	3.78	104.2	9.0	500.0	1.00	75.0	1.0	251.0
GSMF5915A	3.9	3.71	4.10	96.1	7.5	500.0	1.00	25.0	1.0	232.0
GSMF5916A	4.3	4.09	4.52	87.2	6.0	500.0	1.00	5.0	1.0	210.0
GSMF5917A	4.7	4.47	4.94	79.8	5.0	500.0	1.00	5.0	1.5	192.0
GSMF5918A	5.1	4.85	5.36	73.5	4.0	350.0	1.00	5.0	2.0	177.0
GSMF5919A	5.6	5.32	5.88	66.9	2.0	250.0	1.00	5.0	3.0	161.0
GSMF5920A	6.2	5.89	6.51	60.5	2.0	200.0	1.00	2.5	4.0	146.0
GSMF5921A	6.8	6.46	7.14	55.1	2.5	200.0	1.00	2.5	5.2	133.0
GSMF5922A	7.5	7.13	7.88	50.0	3.0	400.0	0.50	2.5	6.0	121.0
GSMF5923A	8.2	7.79	8.61	45.7	3.5	400.0	0.50	2.5	6.5	110.0
GSMF5924A	9.1	8.65	9.56	41.2	4.0	500.0	0.50	2.5	7.0	100.0
GSMF5925A	10.0	9.50	10.50	37.5	4.5	500.0	0.25	2.5	8.0	91.0
GSMF5926A	11.0	10.45	11.55	34.1	5.5	550.0	0.25	0.5	8.4	83.0
GSMF5927A	12.0	11.40	12.60	31.2	6.5	550.0	0.25	0.5	9.1	76.0
GSMF5928A	13.0	12.35	13.65	28.8	7.0	550.0	0.25	0.5	9.9	69.0
GSMF5929A	15.0	14.25	15.75	25.0	9.0	600.0	0.25	0.5	11.4	61.0
GSMF5930A	16.0	15.20	16.80	23.4	10.0	600.0	0.25	0.5	12.2	57.0
GSMF5931A	18.0	17.10	18.90	20.8	12.0	650.0	0.25	0.5	13.7	50.0
GSMF5932A	20.0	19.00	21.00	18.7	14.0	650.0	0.25	0.5	15.2	45.0
GSMF5933A	22.0	20.90	23.10	17.0	17.5	650.0	0.25	0.5	16.7	41.0
GSMF5934A	24.0	22.80	25.20	15.6	19.0	700.0	0.25	0.5	18.2	38.0
GSMF5935A	27.0	25.65	28.35	13.9	23.0	700.0	0.25	0.5	20.6	34.0
GSMF5936A	30.0	28.50	31.50	12.5	26.0	750.0	0.25	0.5	22.8	30.0
GSMF5937A	33.0	31.35	34.65	11.4	33.0	800.0	0.25	0.5	25.1	27.0
GSMF5938A	36.0	34.20	37.80	10.4	38.0	850.0	0.25	0.5	27.4	25.0
GSMF5939A	39.0	37.05	40.95	9.6	45.0	900.0	0.25	0.5	29.7	23.0
GSMF5940A	43.0	40.85	45.15	8.7	53.0	950.0	0.25	0.5	32.7	22.0
GSMF5941A	47.0	44.65	49.35	8.0	67.0	1000.0	0.25	0.5	35.8	19.0
GSMF5942A	51.0	48.45	53.55	7.3	70.0	1100.0	0.25	0.5	38.8	18.0
GSMF5943A	56.0	53.20	58.80	6.7	86.0	1300.0	0.25	0.5	42.6	16.0
GSMF5944A	62.0	58.90	65.10	6.0	100.0	1500.0	0.25	0.5	47.1	14.0
GSMF5945A	68.0	64.60	71.40	5.5	120.0	1700.0	0.25	0.5	51.7	13.0
GSMF5946A	75.0	71.25	78.75	5.0	140.0	2000.0	0.25	0.5	56.0	12.0
GSMF5947A	82.0	77.90	86.10	4.6	160.0	2500.0	0.25	0.5	62.2	11.0
GSMF5948A	91.0	86.45	95.55	4.1	200.0	3000.0	0.25	0.5	69.2	10.0
GSMF5949A	100.0	95.00	105.00	3.7	250.0	3100.0	0.25	0.5	76.0	9.0
GSMF5950A	110.0	104.50	115.50	3.4	300.0	4000.0	0.25	0.5	83.6	8.6
GSMF5951A	120.0	114.00	126.00	3.1	380.0	4500.0	0.25	0.5	91.2	7.8
GSMF5952A	130.0	123.50	136.50	2.9	450.0	5000.0	0.25	0.5	98.8	7.0
GSMF5953A	150.0	142.50	157.50	2.5	600.0	6000.0	0.25	0.5	114.0	6.4
GSMF5954A	160.0	152.00	168.00	2.3	700.0	6500.0	0.25	0.5	121.6	5.8
GSMF5955A	180.0	171.00	189.00	2.1	900.0	7000.0	0.25	0.5	136.8	5.2
GSMF5956A	200.0	190.00	210.00	1.9	1200.0	8000.0	0.25	0.5	152.0	4.7

Notes:

1. The type number listed have a standard tolerance on the nominal zener voltage of ±5%
2. The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed I<sub>ZT</sub> per method.

## Typical Characteristics

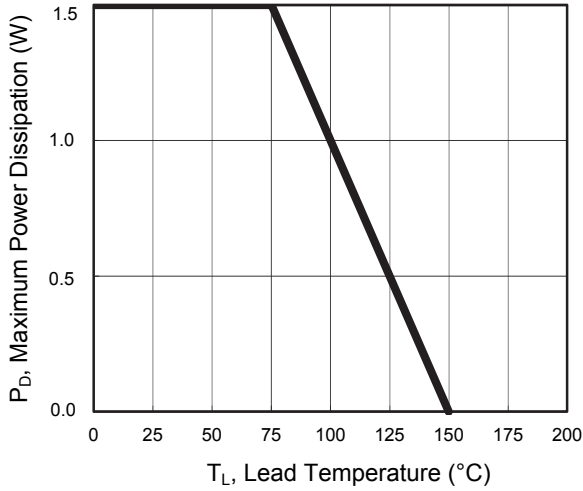


Figure 1. Power Temperature Derating Curve

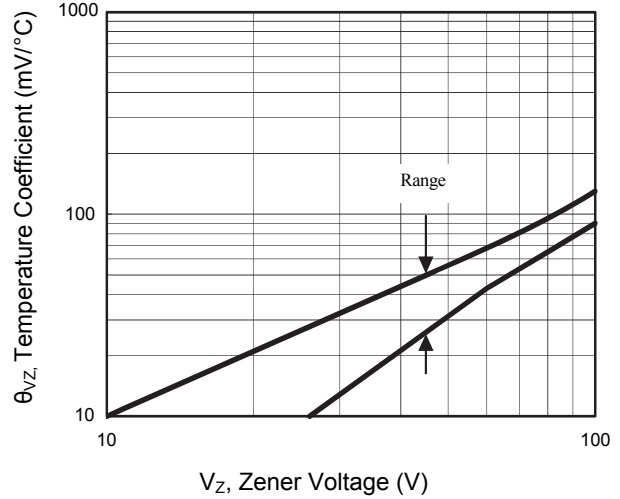


Figure 2. Temperature Coefficients vs. Zener Voltage

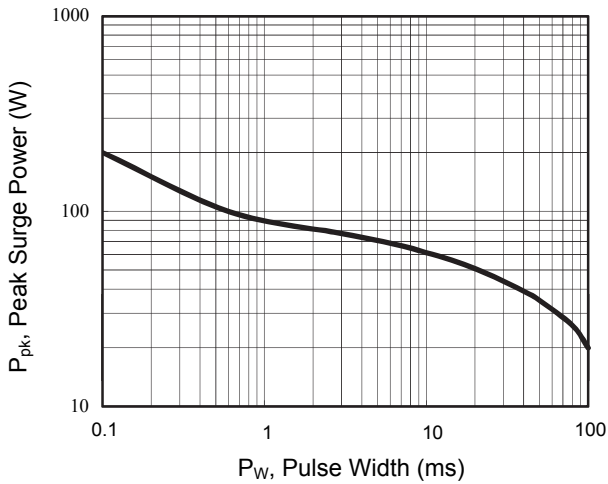


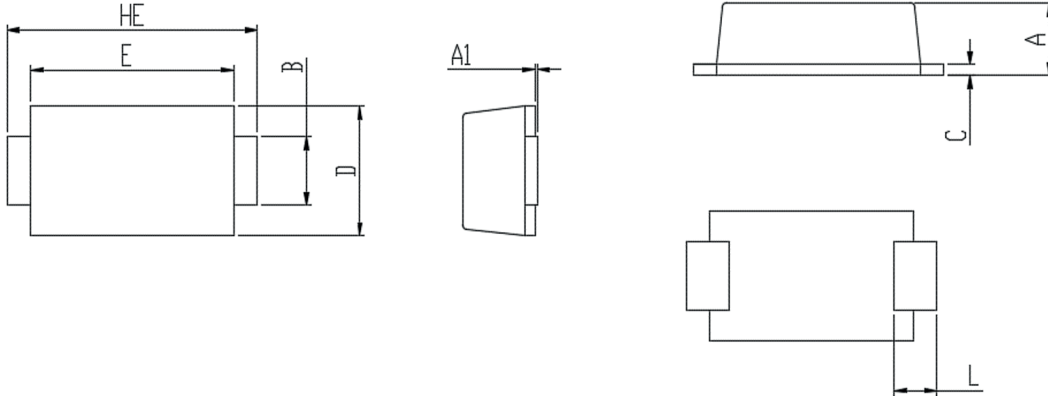
Figure 3. Maximum Surge Power

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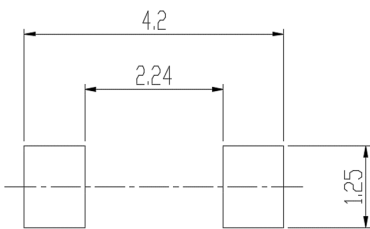
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## Package Outline Dimensions eSGA (SOD-123FL)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.080	0.035	0.043
A1	0.000	0.100	0.000	0.004
B	0.850	1.050	0.033	0.041
C	0.100	0.250	0.004	0.010
D	1.700	2.000	0.067	0.079
E	2.900	3.100	0.114	0.122
L	0.430	0.830	0.017	0.033
HE	3.500	3.900	0.138	0.154

## Recommended Pad Layout



Unit: mm