

GSZ□□□L15AF Series

Zener Diodes

Product Description

Zener Voltage Regulators 1.5W

Features

- Voltage Range 3.3 to 200 Volts
- RoHS Compliant & Halogen Free

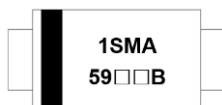
Package and Pin Assignment

SMA (DO-214AC)		Equivalent Circuit
		
Pin	Description	
1	Anode	
2	Cathode	

Ordering and Marking Information

Ordering Information									
Part Number	Package	Part Marking	Quantity / Reel						
GSZ□□□L15AF	SMA (DO-214AC)	1SMA 59□□B	5,000 PCS						
<table><tr><td>- Product Code: GSZ is Zener Diode</td><td>- Voltage Code: □□□, such as 3V3 is 3.3V and 200 is 200V etc.</td><td>- Voltage Tolerance: L is 5%.</td></tr><tr><td>- Series Code: 15 is 59□□B Series</td><td>- Package Code: A is SMA(DO-214AC)</td><td>- Green Level: F is RoHS Compliant and Halogen Free</td></tr></table>				- Product Code: GSZ is Zener Diode	- Voltage Code: □□□, such as 3V3 is 3.3V and 200 is 200V etc.	- Voltage Tolerance: L is 5%.	- Series Code: 15 is 59□□B Series	- Package Code: A is SMA(DO-214AC)	- Green Level: F is RoHS Compliant and Halogen Free
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Marking Information



- **Product Code:**
1SMA59□□B

- **Voltage Code:**
□□, the corresponding
voltage please refer to the
**Voltage Code in Electrical
Characteristics** section.

Absolute Maximum Ratings (T_A=25°C Unless Otherwise Noted)

Symbol	Conditions	Value	Unit
P _D	Power Dissipation(Note1)	1.5	W
V _F	Maximum Forward Voltage at I _F = 200 mA	1.5	V
R _{ΘJA}	Maximum Thermal Resistance Junction to Ambient Air(Note2)	130	K / W
T _J	Junction Temperature Range	-55 to +150	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

Note :

- (1) T_L = Lead temperature at 5.0 m 2 (0.013 mm thick) copper land areas.
- (2) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case.

Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Device	Voltage Code	Zener Voltage Nom.		Zener Impedance Max.			Reverse Leakage Current Max.		DC Zener Current Max.
		V _Z @ I _{ZT}	I _{ZT}	Z _{YT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R @ V _R		I _{ZM}
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
GSZ3V3 L15AF	13	3.3	113.6	10	500	1.0	50	1.0	455
GSZ3V6L15AF	14	3.6	104.2	9.0	500	1.0	35.5	1.0	417
GSZ3V9L15AF	15	3.9	96.1	7.5	500	1.0	12.5	1.0	385
GSZ4V3L15AF	16	4.3	87.2	6.0	500	1.0	2.5	1.0	349
GSZ4V7 L15AF	17	4.7	79.8	5.0	500	1.0	2.5	1.5	319
GSZ5V1 L15AF	18	5.1	73.5	4.0	350	1.0	2.5	2.0	294
GSZ5V6 L15AF	19	5.6	66.9	2.0	250	1.0	2.5	3.0	268
GSZ6V2 L15AF	20	6.2	60.5	2.0	200	1.0	2.5	4.0	242
GSZ6V8 L15AF	21	6.8	55.1	2.5	200	0.5	2.5	5.2	221
GSZ7V5 L15AF	22	7.5	50	3.0	400	0.5	2.5	6.0	200

Device	Voltage Code	Zener Voltage Nom.		Zener Impedance Max.			Reverse Leakage Current Max.		DC Zener Current Max.
		V _Z @ I _{ZT}	I _{ZT}	Z _{YT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R @ V _R		
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	I _{ZM} (mA)
GSZ8V2 L15AF	23	8.2	45.7	3.5	400	0.5	2.5	6.5	183
GSZ9V1 L15AF	24	9.1	41.2	4.0	400	0.5	2.5	7.0	165
GSZ10 VL15AF	25	10	37.5	4.5	500	0.25	2.5	8.0	150
GSZ12 VL15AF	26	11	34.1	5.5	550	0.25	1.0	8.4	136
GSZ12VL15AF	27	12	31.2	6.5	550	0.25	1.0	9.1	125
GSZ13VL15AF	28	13	28.8	7.0	550	0.25	1.0	9.9	115
GSZ15VL15AF	29	15	25.0	9.0	600	0.25	1.0	11.4	100
GSZ16VL15AF	30	16	23.4	10	600	0.25	1.0	12.2	93
GSZ18VL15AF	31	18	20.8	12	650	0.25	1.0	13.7	83
GSZ20VL15AF	32	20	18.7	14	650	0.25	1.0	15.2	75
GSZ22VL15AF	33	22	17.0	17.5	650	0.25	1.0	16.7	68
GSZ24VL15AF	34	24	15.6	19	700	0.25	1.0	18.2	62
GSZ27VL15AF	35	27	13.9	23	700	0.25	1.0	20.6	55
GSZ30VL15AF	36	30	12.5	26	750	0.25	1.0	22.8	50
GSZ33VL15AF	37	33	11.4	33	800	0.25	1.0	25.1	45
GSZ36VL15AF	38	36	10.4	38	850	0.25	1.0	27.4	41
GSZ39VL15AF	39	39	9.6	45	900	0.25	1.0	29.7	38
GSZ43VL15AF	40	43	8.7	53	950	0.25	1.0	32.7	34
GSZ47VL15AF	41	47	8.0	67	1000	0.25	1.0	35.8	31
GSZ51VL15AF	42	51	7.3	70	1100	0.25	1.0	38.8	29
GSZ56VL15AF	43	56	6.7	86	1300	0.25	1.0	42.6	26
GSZ62VL15AF	44	62	6.0	100	1500	0.25	1.0	47.1	24
GSZ68VL15AF	45	68	5.5	120	1700	0.25	1.0	51.7	22
GSZ75VL15AF	46	75	5.0	140	2000	0.25	1.0	56.0	20
GSZ82VL15AF	47	82	4.6	160	2500	0.25	1.0	62.2	18
GSZ91VL15AF	48	91	4.1	200	3000	0.25	1.0	69.2	16
GSZ100L39AF	49	100	3.7	250	3100	0.25	1.0	76.0	15
GSZ110L15AF	50	110	3.4	300	4000	0.25	1.0	83.6	13
GSZ120L15AF	51	120	3.1	380	4500	0.25	1.0	91.2	12
GSZ130L15AF	52	130	2.9	450	5000	0.25	1.0	98.8	11

Device	Voltage Code	Zener Voltage Nom.		Zener Impedance Max.			Reverse Leakage Current Max.		DC Zener Current Max.
		$V_Z @ I_{ZT}$	I_{ZT}	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	I_{ZK}	$I_R @ V_R$		I_{ZM}
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
GSZ150L15AF	53	150	2.5	600	6000	0.25	1.0	114.0	10
GSZ160L15AF	54	160	2.3	700	6500	0.25	1.0	121.6	9.0
GSZ180L15AF	55	180	2.1	900	7000	0.25	1.0	136.8	8.0
GSZ200L15AF	56	200	1.9	1200	8000	0.25	1.0	152.0	7.0

Note:

- (1) The type of number listed have a standard tolerance on the nominal Zener voltage of $\pm 5\%$
- (2) The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sinewave superimposed on I_{ZT} per JEDEC Method

(3)

Typical Characteristics (T_A=25°C Unless Otherwise Noted)

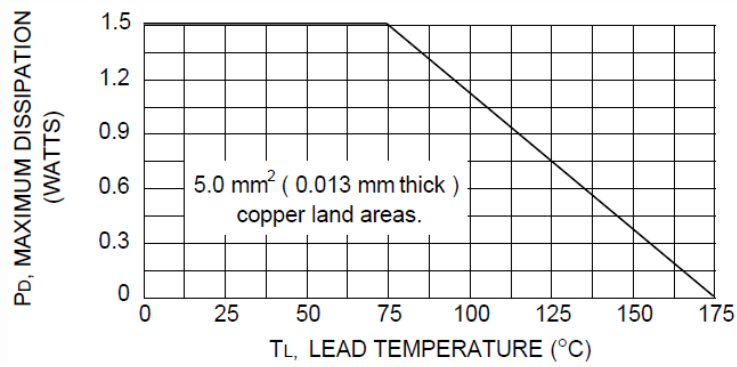
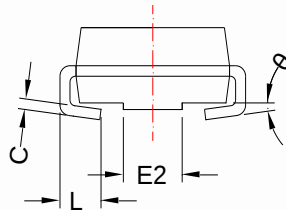
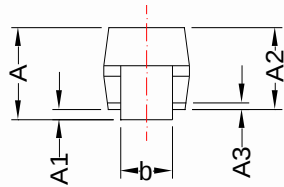
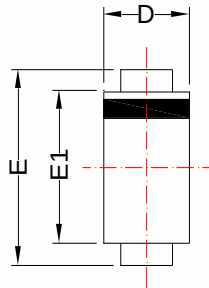


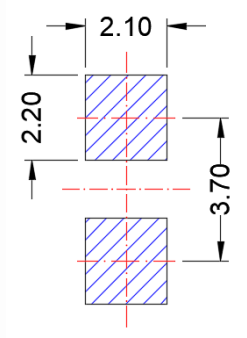
Fig. 1 POWER TEMPERATURE DERATING CURVE

SMA(DO-214AC)

Package Dimension



Recommended Land Pattern



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	1.70	2.90	0.067	0.114
A1	1.70	---	0.067	---
A2	0.00	0.20	0.000	0.008
A3	0.05	0.30	0.002	0.012
b	1.20	1.70	0.047	0.067
c	0.15	0.41	0.006	0.016
D	2.18	2.95	0.086	0.116
E	4.70	5.60	0.185	0.220
E1	3.90	4.70	0.154	0.185
E2	1.40	1.90	0.055	0.075
L	0.75	1.6	0.030	0.063
θ	0°	8°	0°	8°

Note:

Dimensions are exclusive of Burrs, Mold Flash & Tie Bar extrusions.

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