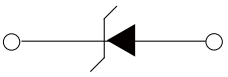
FEATURES

- Complete voltage range 3.3 to 330 volts
- High peak reverse power dissipation
- High reliability
- Low leakage current
- Standard zener voltage tolerance is ± 5%

DO-214AC(SMA)



Schematic Symbol

MECHANICAL DATA

- Case : Molded plastic body
- Polarity : Polarity symbol marking on body
- Mounting Position : Any

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
DC Power dissipation at T_L = 50 °C	P_D	2.0	W
Maximum instantaneous forward voltage@ I_F=200mA	V_F	1.2	V
Maximum junction temperature	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

Part Number	Device Marking Code	Nominal Zener Voltage			Test current	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		V_Z Min(V)	V_Z AVE.(V)	V_Z Max(V)	I_{ZT} (mA)	Z_{ZT} at I_{ZT} (Ω)	Z_{ZK} at I_{ZK} (Ω)	I_{ZK} (mA)	I_R (uA)	V_R (V)	I_{ZM} (mA)
SMA2Z3.0A	2H1	2.85	3.0	3.15	160.0	8.0	400	1.00	100.0	1.0	603.0
SMA2Z3.3A	2H2	3.14	3.3	3.47	145.0	8.0	400	1.00	100.0	1.0	548.0
SMA2Z3.6A	2H3	3.42	3.6	3.78	139.0	5.0	400	1.00	100.0	1.0	502.0
SMA2Z3.9A	2H4	3.71	3.9	4.10	128.0	5.0	400	1.00	50.0	1.0	464.0
SMA2Z4.3A	2H5	4.09	4.3	4.52	116.0	4.5	400	1.00	50.0	1.0	421.0
SMA2Z4.7A	2H6	4.47	4.7	4.94	106.0	4.5	550	1.00	10.0	1.0	385.0
SMA2Z5.1A	2H7	4.85	5.1	5.36	98.0	3.5	600	1.00	10.0	1.0	354.0
SMA2Z5.6A	2H8	5.32	5.6	5.88	89.5	2.5	500	1.00	10.0	2.0	323.0
SMA2Z6.2A	2A0	5.89	6.2	6.51	80.5	1.5	700	1.00	10.0	3.0	292.0
SMA2Z6.8A	2A1	6.46	6.8	7.14	73.5	2.0	700	1.00	10.0	4.0	266.0
SMA2Z7.5A	2A2	7.13	7.5	7.88	66.5	2.0	700	0.50	10.0	5.0	242.0
SMA2Z8.2A	2A3	7.79	8.2	8.61	61.0	2.3	700	0.50	10.0	6.0	220.0
SMA2Z9.1A	2A4	8.65	9.1	9.56	55.0	2.5	700	0.50	10.0	7.0	200.0
SMA2Z10A	2A5	9.50	10.0	10.50	50.0	3.5	700	0.25	10.0	7.6	182.0
SMA2Z11A	2A6	10.45	11.0	11.55	45.5	4.0	700	0.25	1.0	8.4	166.0
SMA2Z12A	2A7	11.40	12.0	12.60	41.5	4.5	700	0.25	1.0	9.1	152.0
SMA2Z13A	2A8	12.35	13.0	13.65	38.5	5.0	700	0.25	0.5	9.9	138.0
SMA2Z14A	2A9	13.30	14.0	14.70	35.7	5.5	700	0.25	0.5	10.6	130.0
SMA2Z15A	2B0	14.25	15.0	15.75	33.4	7.0	700	0.25	0.5	11.4	122.0
SMA2Z16A	2B1	15.20	16.0	16.80	31.2	8.0	700	0.25	0.5	12.2	114.0
SMA2Z17A	2B2	16.15	17.0	17.85	29.4	9.0	750	0.25	0.5	13.0	107.0
SMA2Z18A	2B3	17.10	18.0	18.90	27.8	10.0	750	0.25	0.5	13.7	100.0
SMA2Z19A	2B4	18.05	19.0	19.95	26.3	11.0	750	0.25	0.5	14.4	95.0
SMA2Z20A	2B5	19.00	20.0	21.00	25.0	11.0	750	0.25	0.5	15.2	90.0
SMA2Z22A	2B6	20.90	22.0	23.10	22.8	12.0	750	0.25	0.5	16.7	82.0
SMA2Z24A	2B7	22.80	24.0	25.20	20.8	13.0	750	0.25	0.5	18.2	76.0
SMA2Z27A	2B8	25.65	27.0	28.35	18.5	18.0	750	0.25	0.5	20.6	68.0
SMA2Z30A	2B9	28.50	30.0	31.50	16.6	20.0	1000	0.25	0.5	22.5	60.0
SMA2Z33A	2C0	31.35	33.0	34.65	15.1	23.0	1000	0.25	0.5	25.1	55.0
SMA2Z36A	2C1	34.20	36.0	37.80	13.9	25.0	1000	0.25	0.5	27.4	50.0

Part Number	Device Marking Code	Nominal Zener Voltage			Test current	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		V_Z Min(V)	V_Z AVE.(V)	V_Z Max(V)	I_{ZT} (mA)	Z_{ZT} at I_{ZT} (Ω)	Z_{ZK} at I_{ZK} (Ω)	I_{ZK} (mA)	I_R (uA)	V_R (V)	I_{ZM} (mA)
SMA2Z39A	2C2	37.05	39.0	40.95	12.8	30.0	1000	0.25	0.5	29.7	47.0
SMA2Z43A	2C3	40.85	43.0	45.15	11.6	35.0	1500	0.25	0.5	32.7	43.0
SMA2Z47A	2C4	44.65	47.0	49.35	10.6	40.0	1500	0.25	0.5	35.8	39.0
SMA2Z51A	2C5	48.45	51.0	53.55	9.8	48.0	1500	0.25	0.5	38.8	36.0
SMA2Z56A	2C6	53.20	56.0	58.80	9.0	55.0	2000	0.25	0.5	42.6	32.0
SMA2Z62A	2C7	58.90	62.0	65.10	8.1	60.0	2000	0.25	0.5	47.1	29.0
SMA2Z68A	2C8	64.60	68.0	71.40	7.4	75.0	2000	0.25	0.5	51.7	27.0
SMA2Z75A	2C9	71.25	75.0	78.75	6.7	90.0	2000	0.25	0.5	56.0	24.0
SMA2Z82A	2F0	77.90	82.0	86.10	6.1	100.0	3000	0.25	0.5	62.2	22.0
SMA2Z91A	2F1	86.45	91.0	95.55	5.5	125.0	3000	0.25	0.5	69.2	20.0
SMA2Z100A	2F2	95.00	100.0	105.00	5.0	175.0	3000	0.25	0.5	76.0	18.0
SMA2Z110A	2F3	104.50	110.0	115.50	4.5	250.0	4000	0.25	0.5	83.6	17.0
SMA2Z120A	2F4	114.00	120.0	126.00	4.2	325.0	4500	0.25	0.5	91.2	15.0
SMA2Z130A	2F5	123.50	130.0	136.50	3.8	400.0	5000	0.25	0.5	98.8	14.0
SMA2Z140A	2F6	133.00	140.0	147.00	3.6	500.0	5500	0.25	0.5	106.4	13.0
SMA2Z150A	2F7	142.50	150.0	157.50	3.3	575.0	6000	0.25	0.5	114.0	12.0
SMA2Z160A	2F8	152.00	160.0	168.00	3.1	650.0	6500	0.25	0.5	121.6	11.0
SMA2Z170A	2F9	161.50	170.0	178.50	2.9	675.0	7000	0.25	0.5	130.4	11.0
SMA2Z180A	2G1	171.00	180.0	189.00	2.8	725.0	7000	0.25	0.5	136.8	10.0
SMA2Z190A	2G2	180.50	190.0	199.50	2.6	825.0	8000	0.25	0.5	144.8	10.0
SMA2Z200A	2G3	190.00	200.0	210.00	2.5	1900.0	9990	0.25	0.5	152.0	9.0
SMA2Z220A	2G4	209.00	220.0	231.00	2.0	2000.0	8500	0.25	0.5	167.0	8.0
SMA2Z270A	2G5	256.50	270.0	283.50	1.6	2200.0	8500	0.25	0.5	205.0	6.7
SMA2Z300A	2G6	285.00	300.0	315.00	1.5	2200.0	9000	0.25	0.5	228.0	5.9
SMA2Z330A	2G7	313.50	330.0	346.50	1.4	2300.0	9000	0.25	0.5	250.0	5.4

CHARACTERISTIC CURVES

Fig.1-Power Temperature Derating Curve

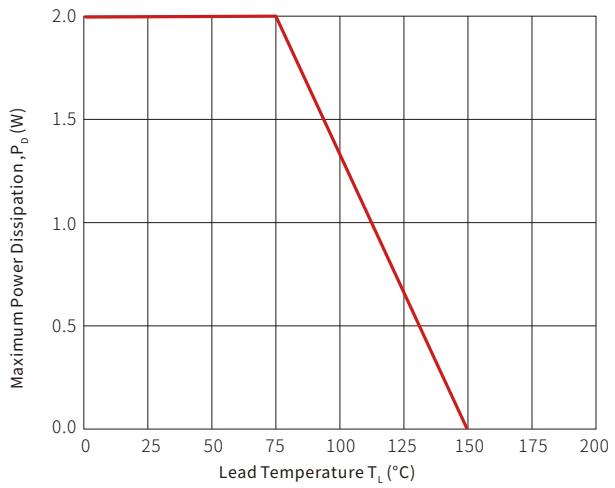


Fig.2-Temperature Coefficients v.s. Zener Voltage

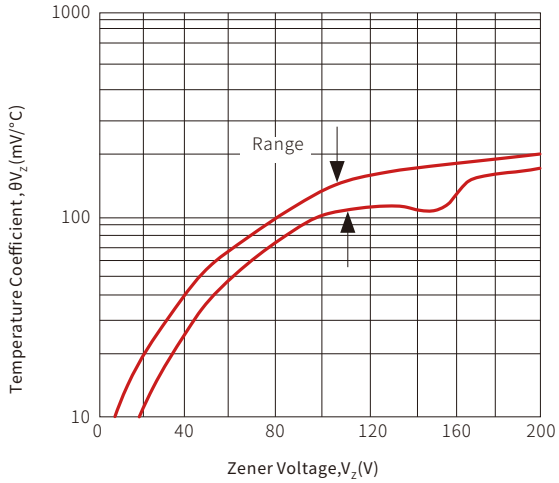


Fig.3-Typical Thermal Resistance v.s. Lead Length

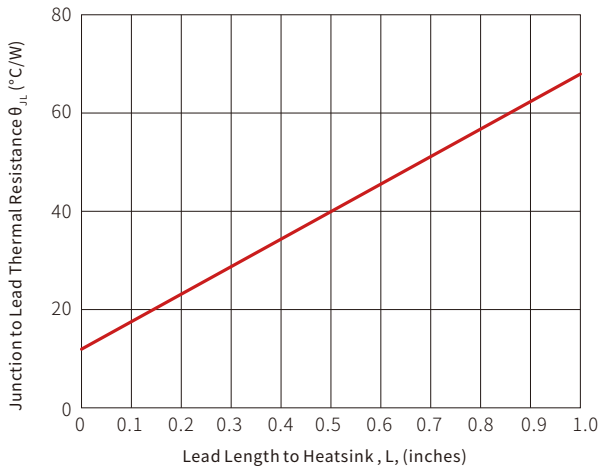
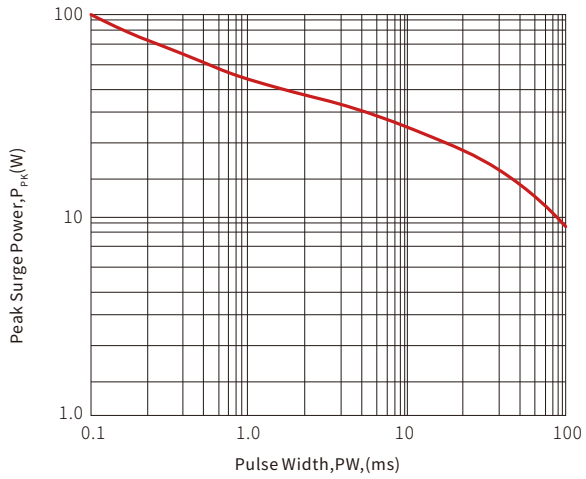
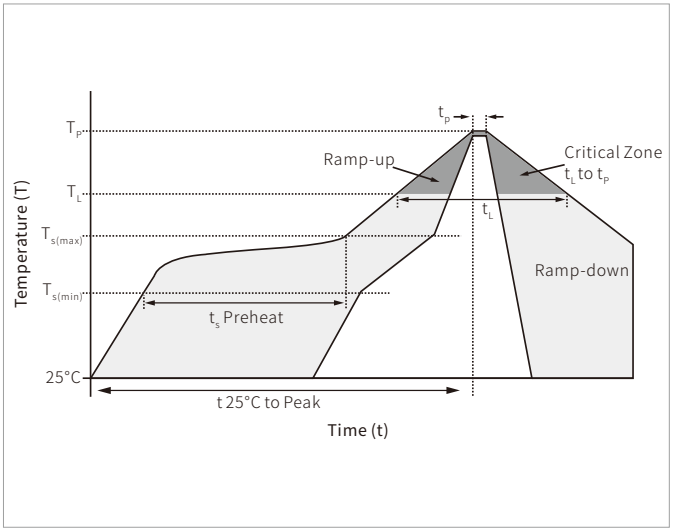


Fig.4-Maximum Surge Power

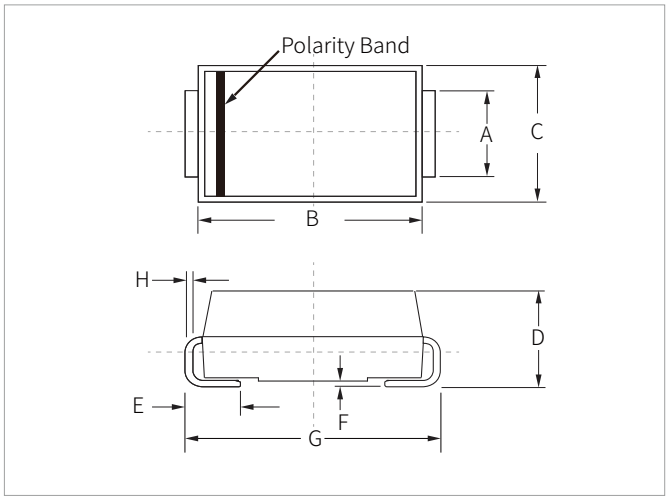


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max.
Do not exceed		260°C

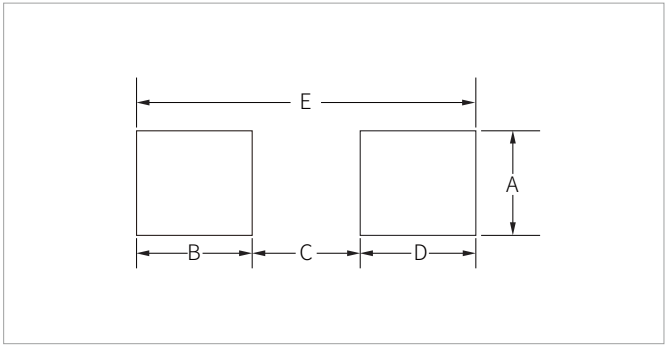


DO-214AC(SMA) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.20	1.60	0.047	0.063
B	4.20	4.60	0.165	0.181
C	2.40	2.80	0.094	0.110
D	2.00	2.40	0.079	0.094
E	0.76	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	4.85	5.25	0.191	0.207
H	0.15	0.30	0.006	0.012

RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.63	-	0.064	-
B	1.45	-	0.057	-
C	-	2.80	-	0.090
D	1.45	-	0.057	-
E	5.28REF		0.208REF	

ORDERING INFORMATION

Part Number	Component Package	Q'TY/Reel (Pcs)	QTY/Box (Pcs)	Q'TY/Carton (Pcs)	Reel Size
SMA2ZxxAQ	DO-214AC(SMA)	5000	10000	80000	11"
		7500	15000	120000	13"

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