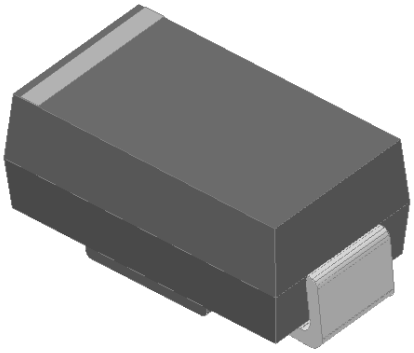
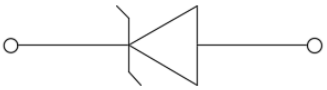
Surface Mount Zener Diodes





Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Mechanical Data

- **Package**: DO-214AC (SMA)
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

■Maximum Ratings (Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	MAX
DC power dissipation at TL = 75 °C	P_D	W	3
Maximum instantaneous forward voltage@ I_F=500mA	V_F	V	1.5
Maximum junction temperature	T_j	℃	-55 to +150
Storage temperature range	T_{stg}	℃	-55 to +150

■Thermal Characteristics （Ta=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical)	$R_{\theta J-L}$(1)	℃/W	junction to lead	30
	$R_{\theta J-A}$(1)	℃/W	junction to ambient	170

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

■Electrical Characteristics（Ta=25℃ Unless otherwise specified）

Part Number	Nominal Zener voltage			Test current	Maximum dynamic impedance resistance			Maximum reverse leakage current		Maximum DC Zener Current
	Min V_Z(1) at I_{ZT}	Typ. V_Z(1) at I_{ZT}	Max V_Z(1) at I_{ZT}	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK}	I_{ZK}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	Ω	mA	μA	V	mA
SMA3Z5.1A	4.85	5.1	5.36	73.5	4.0	350	1.0	5.0	2.0	528.0
SMA3Z5.6A	5.32	5.6	5.88	66.9	2.0	250	1.0	5.0	3.0	481.0
SMA3Z6.2A	5.89	6.2	6.51	60.5	2.0	200	1.0	5.0	4.0	435.0
SMA3Z6.8A	6.46	6.8	7.14	55.1	2.5	200	1.0	5.0	5.2	393.0
SMA3Z7.5A	7.13	7.5	7.88	50.0	3.0	400	0.5	5.0	6.0	360.0
SMA3Z8.2A	7.79	8.2	8.61	45.7	3.5	400	0.5	5.0	6.5	330.0

Part Number	Nominal Zener voltage			Test current	Maximum dynamic impedance resistance			Maximum reverse leakage current		Maximum DC Zener Current
	Min V_Z[(1)] at I_{ZT}	Typ. V_Z[(1)] at I_{ZT}	Max V_Z[(1)] at I_{ZT}	I_{ZT}	Z_{ZT} at I_{ZT}	Z_{ZK} at I_{ZK}	I_{ZK}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	Ω	mA	μA	V	mA
SMA3Z9.1A	8.65	9.1	9.56	41.2	4.0	500	0.5	5.0	7.0	297.0
SMA3Z10A	9.50	10.0	10.50	37.5	4.5	500	0.25	5.0	8.0	270.0
SMA3Z11A	10.45	11.0	11.55	34.1	5.5	550	0.25	1.0	8.4	225.0
SMA3Z12A	11.40	12.0	12.60	31.2	6.5	550	0.25	1.0	9.1	246.0
SMA3Z13A	12.35	13.0	13.65	28.8	7	550	0.25	1.0	9.9	208.0
SMA3Z15A	14.25	15.0	15.75	25	9	600	0.25	1.0	11.4	180.0
SMA3Z16A	15.20	16.0	16.80	23.4	10	600	0.25	1.0	12.2	169.0
SMA3Z18A	17.10	18.0	18.90	20.8	12	650	0.25	1.0	13.7	150.0
SMA3Z20A	19.00	20.0	21.00	18.7	14	650	0.25	1.0	15.2	135.0
SMA3Z22A	20.90	22.0	23.10	17	17.5	650	0.25	1.0	16.7	123.0
SMA3Z24A	22.80	24.0	25.20	15.6	19	700	0.25	1.0	18.2	112.0
SMA3Z27A	25.65	27.0	28.35	13.9	23	700	0.25	1.0	20.6	100.0
SMA3Z30A	28.50	30.0	31.50	12.5	28	750	0.25	1.0	22.8	90.0
SMA3Z33A	31.35	33.0	34.65	11.4	33	800	0.25	1.0	25.1	82.0
SMA3Z36A	34.20	36.0	37.80	10.4	38	850	0.25	1.0	27.4	75.0
SMA3Z39A	37.05	39.0	40.95	9.6	45	900	0.25	1.0	29.7	69.0
SMA3Z43A	40.85	43.0	45.15	8.7	53	950	0.25	1.0	32.7	63.0
SMA3Z47A	44.65	47.0	49.35	8	67	1000	0.25	1.0	35.8	57.0
SMA3Z51A	48.45	51.0	53.55	7.3	70	1100	0.25	1.0	38.8	53.0
SMA3Z56A	53.20	56.0	58.80	6.7	86	1300	0.25	1.0	42.6	48.0
SMA3Z62A	58.90	62.0	65.10	6	100	1500	0.25	1.0	47.1	44.0
SMA3Z68A	64.60	68.0	71.40	5.5	120	1700	0.25	1.0	51.7	40.0
SMA3Z75A	71.25	75.0	78.75	5	140	2000	0.25	1.0	56.0	36.0
SMA3Z82A	77.90	82.0	86.10	4.6	160	2500	0.25	1.0	62.2	33.0
SMA3Z91A	86.45	91.0	95.55	4.1	200	3000	0.25	1.0	69.2	30.0
SMA3Z100A	95.00	100.0	105.00	3.7	250	3100	0.25	1.0	76.0	27.0
SMA3Z110A	104.50	110.0	115.50	3.4	300	4000	0.25	1.0	83.6	25.0
SMA3Z120A	114.00	120.0	126.00	3.1	380	4500	0.25	1.0	91.2	22.0
SMA3Z130A	123.50	130.0	136.50	2.9	450	5000	0.25	1.0	98.8	21.0
SMA3Z150A	142.50	150.0	157.50	2.5	600	6000	0.25	1.0	114.0	18.0
SMA3Z160A	152.00	160.0	168.00	2.3	700	6500	0.25	1.0	121.6	17.0
SMA3Z180A	171.00	180.0	189.00	2.1	900	7000	0.25	1.0	136.8	15.0
SMA3Z200A	190.00	200.0	210.00	1.9	1200	8000	0.25	1.0	152.0	14.0

Notes:

（1）Nominal Zener voltage Range：95% Typ.Vz (1)at Izt----105% Typ.Vz (1)at Izt

（2）Surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on IZT per JEDEC method

■ **Characteristics** (Typical)

FIG1: Power Temperature Derating Crue

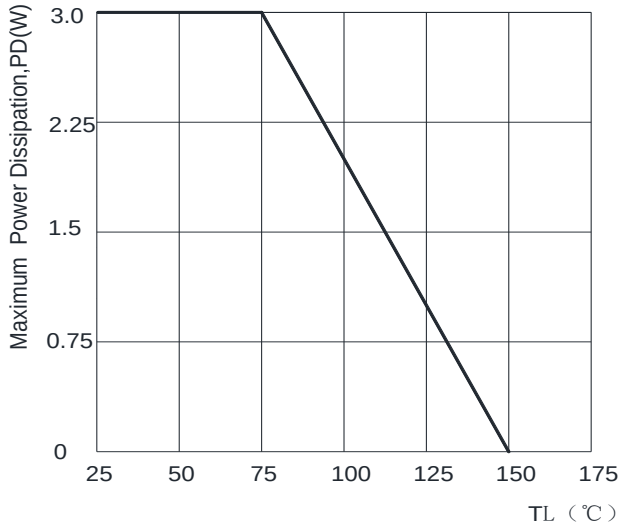


FIG2:Typical Zener Impedance

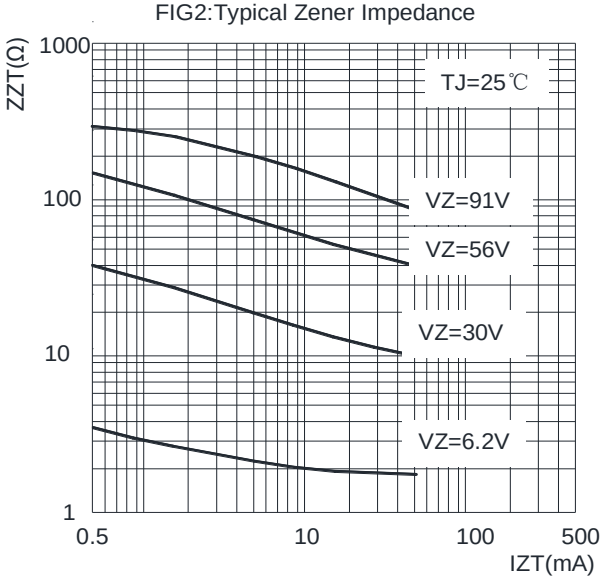
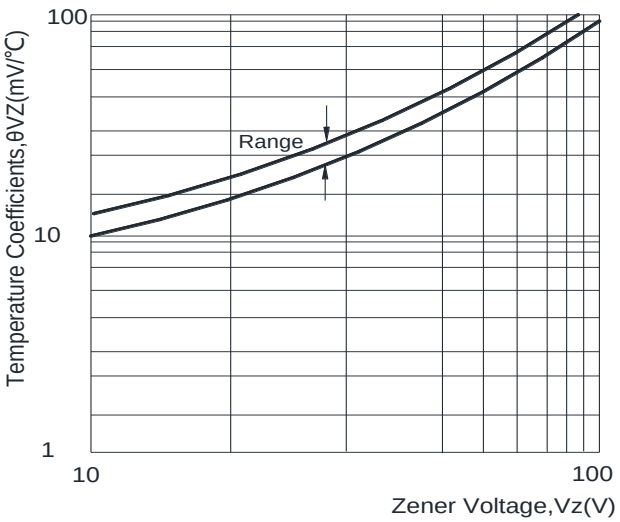


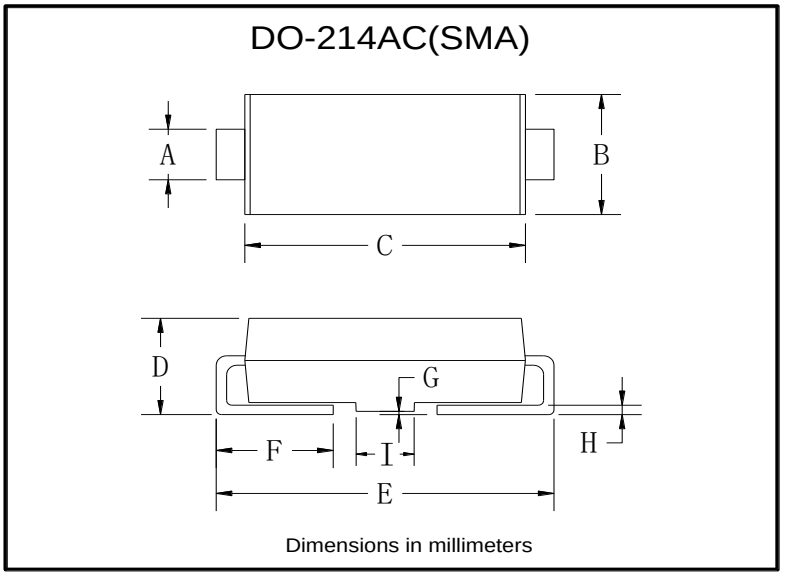
FIG4:Temperature Coefficients v.s. Zener Voltage



■Ordering Information (Example)

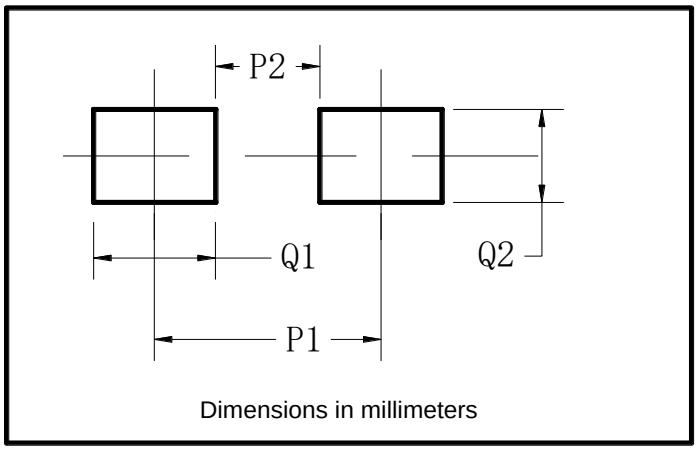
PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMA3ZXXA SERIES	F1	Approximate 0.059	5000	/	80000	13” reel

■ Outline Dimensions



DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.00	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.05	0.20
H	0.15	0.31
I	1.70	2.10

■Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
Q1	2.50
Q2	1.70

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website http:// www.21yangjie.com , or consult your nearest Yangjie's sales office for further assistance.