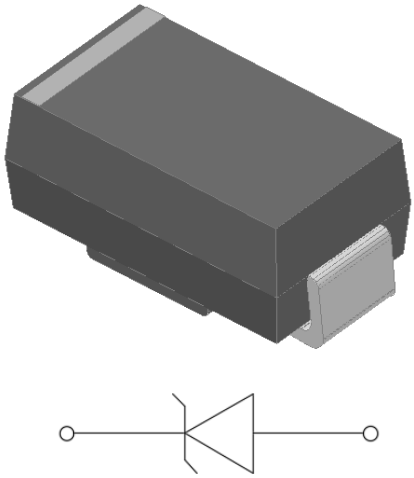
Surface Mount Zener Diodes



Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Part no. with suffix “Q” means AEC-Q101 qualified

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 T_L = 75 °C	P_D	W	1.5
Maximum instantaneous forward voltage@ I_F=200mA	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	120

Note
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.4" x 0.4" (10 mm x 10 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
SMA5921AQ	6.46	6.8	7.14	55.1	2.5	200	1.00	10.0	5.2	221.0
SMA5922AQ	7.13	7.5	7.88	50.0	3.0	400	0.50	10.0	6.0	200.0
SMA5923AQ	7.79	8.2	8.61	45.7	3.5	400	0.50	10.0	6.5	183.0
SMA5924AQ	8.65	9.1	9.56	41.2	4.0	500	0.50	10.0	7.0	165.0
SMA5925AQ	9.50	10.0	10.50	37.5	4.5	500	0.25	10.0	8.0	150.0

SMA5921AQ THRU SMA5956AQ

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
SMA5926AQ	10.45	11.0	11.55	34.1	5.5	550	0.25	0.5	8.4	136.0
SMA5927AQ	11.40	12.0	12.60	31.2	6.5	550	0.25	0.5	9.1	125.0
SMA5928AQ	12.35	13.0	13.65	28.8	7.0	550	0.25	0.5	9.9	115.0
SMA5929AQ	14.25	15.0	15.75	25.0	9.0	600	0.25	0.5	11.4	100.0
SMA5930AQ	15.20	16.0	16.80	23.4	10.0	600	0.25	0.5	12.2	94.0
SMA5931AQ	17.10	18.0	18.90	20.8	12.0	650	0.25	0.5	13.7	83.0
SMA5932AQ	19.00	20.0	21.00	18.7	14.0	650	0.25	0.5	15.2	75.0
SMA5933AQ	20.90	22.0	23.10	17.0	17.5	650	0.25	0.5	16.7	68.0
SMA5934AQ	22.80	24.0	25.20	15.6	19.0	700	0.25	0.5	18.2	63.0
SMA5935AQ	25.65	27.0	28.35	13.9	23.0	700	0.25	0.5	20.6	56.0
SMA5936AQ	28.50	30.0	31.50	12.5	26.0	750	0.25	0.5	22.8	50.0
SMA5937AQ	31.35	33.0	34.65	11.4	33.0	800	0.25	0.5	25.1	45.0
SMA5938AQ	34.20	36.0	37.80	10.4	38.0	850	0.25	0.5	27.4	42.0
SMA5939AQ	37.05	39.0	40.95	9.6	45.0	900	0.25	0.5	29.7	38.0
SMA5940AQ	40.85	43.0	45.15	8.7	53.0	950	0.25	0.5	32.7	35.0
SMA5941AQ	44.65	47.0	49.35	8.0	67.0	1000	0.25	0.5	35.8	32.0
SMA5942AQ	48.45	51.0	53.55	7.3	70.0	1100	0.25	0.5	38.8	29.0
SMA5943AQ	53.20	56.0	58.80	6.7	86.0	1300	0.25	0.5	42.6	27.0
SMA5944AQ	58.90	62.0	65.10	6.0	100.0	1500	0.25	0.5	47.1	24.0
SMA5945AQ	64.60	68.0	71.40	5.5	120.0	1700	0.25	0.5	51.7	22.0
SMA5946AQ	71.25	75.0	78.75	5.0	140.0	2000	0.25	0.5	56.0	20.0
SMA5947AQ	77.90	82.0	86.10	4.6	160.0	2500	0.25	0.5	62.2	18.0
SMA5948AQ	86.45	91.0	95.55	4.1	200.0	3000	0.25	0.5	69.2	16.0
SMA5949AQ	95.00	100.0	105.00	3.7	250.0	3100	0.25	0.5	76.0	15.0
SMA5950AQ	104.50	110.0	115.50	3.4	300.0	4000	0.25	0.5	83.6	14.0
SMA5951AQ	114.00	120.0	126.00	3.1	380.0	4500	0.25	0.5	91.2	13.0
SMA5952AQ	123.50	130.0	136.50	2.9	450.0	5000	0.25	0.5	98.8	12.0
SMA5953AQ	142.50	150.0	157.50	2.5	600.0	6000	0.25	0.5	114.0	10.0
SMA5954AQ	152.00	160.0	168.00	2.3	700.0	6500	0.25	0.5	121.6	9.4
SMA5955AQ	171.00	180.0	189.00	2.1	900.0	7000	0.25	0.5	136.8	8.3
SMA5956AQ	190.00	200.0	210.00	1.9	1200.0	8000	0.25	0.5	152.0	7.5

Notes:

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

■ Characteristics (Typical)

Fig1 ： Power Temperature Derating Crue

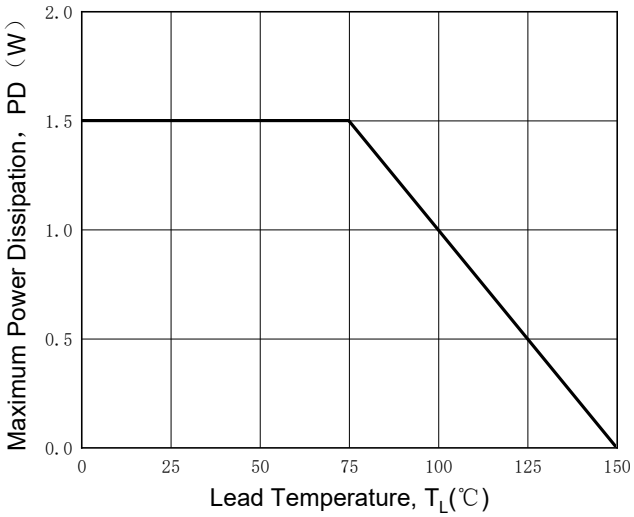


Fig2 ： Typical Zener Breakdown Characteristics

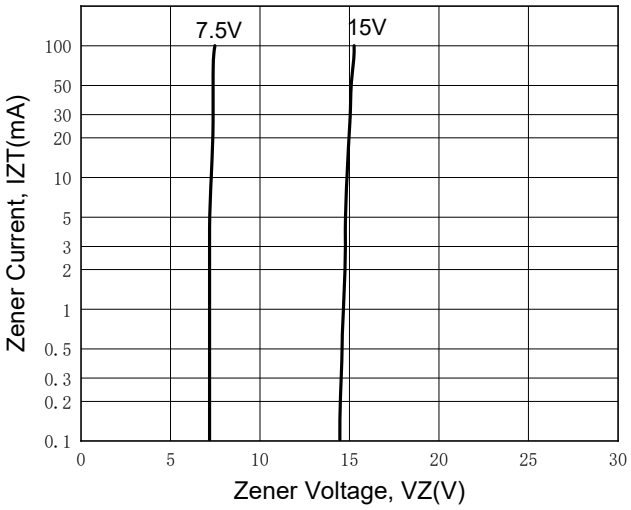
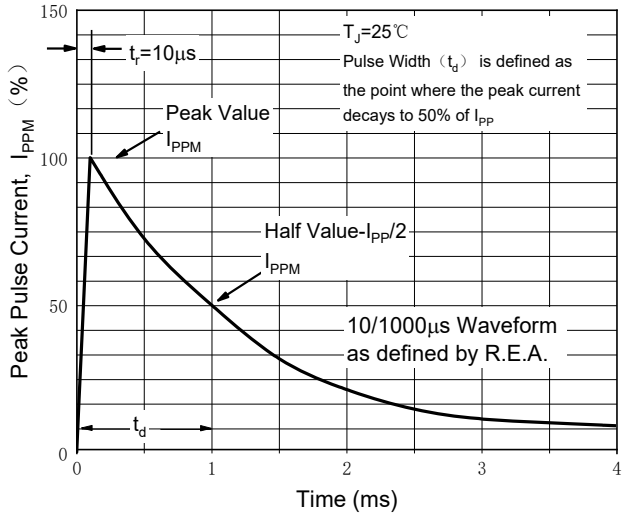


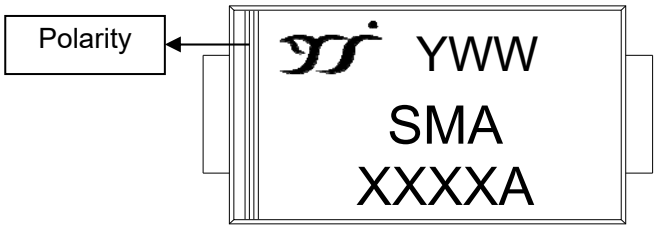
Fig.3 Pulse Waveform



■Ordering Information (Example)

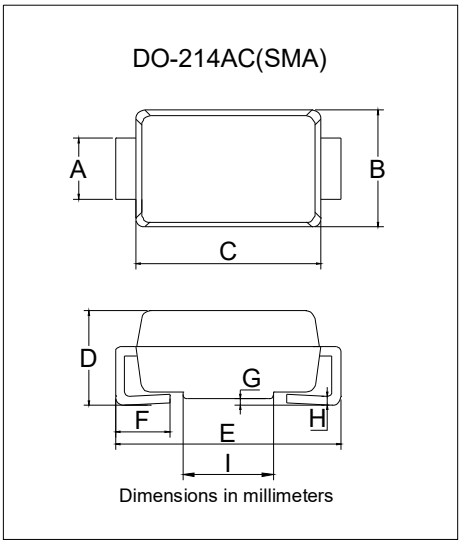
PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMA5921AQ ~SMA5956AQ	F2	Approximate 0.059	7500	120000	13” reel

■ Marking Information



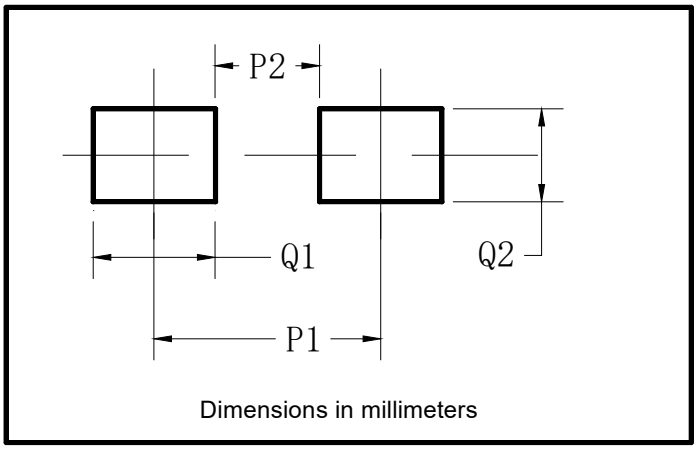
Note:
1. All marking is at middle of the product body
2. All marking is in laser printing
3.XXXXX is marking code, like SMA5921AQ marking code is 5921A
4. Body color: Black
5. YWW is date code, “Y” is year. “WW” is week.
For instance:
The 45th week of 2021, date code is 145
The 45th week of 2022, date code is 245

■ 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	1.7	2.1

■Suggested Pad Layout



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

Disclaimer

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