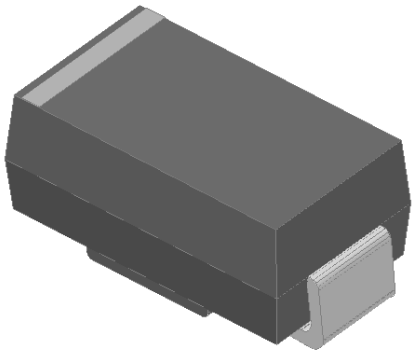
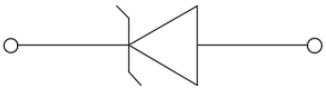
Surface Mount Zener Diodes





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	1
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)(1)	$R_{\theta J-L}$	℃/W	junction to lead	30
	$R_{\theta J-A}$	℃/W	junction to ambient	140

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}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	μA	V	mA
PTZ5.6B	5.6	5.95	6.3	40	8	20	1.5	118
PTZ6.2B	6.2	6.6	7.0	40	6	20	3.0	116
PTZ6.8B	6.8	7.25	7.7	40	6	20	3.5	97
PTZ7.5B	7.5	7.95	8.4	40	4	20	4.0	88
PTZ8.2B	8.2	8.75	9.3	40	4	20	5.0	80
PTZ9.1B	9.1	9.65	10.2	40	6	20	6.0	73

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}	I_R	Test voltage V_R	I_{ZM}
	V	V	V	mA	Ω	μA	V	mA
PTZ10B	10	10.6	11.2	40	6	10	7.0	66
PTZ11B	11	11.65	12.3	20	8	10	8.0	60
PTZ12B	12	12.75	13.5	20	8	10	9.0	54.9
PTZ13B	13.3	14.15	15	20	10	10	10.0	49
PTZ15B	14.7	15.6	16.5	20	10	10	11.0	44.9
PTZ16B	16.2	17.25	18.3	20	12	10	12.0	40.6
PTZ18B	18	19.15	20.3	20	12	10	13.0	36.6
PTZ20B	20	21.2	22.4	20	14	10	15.0	33
PTZ22B	22	23.25	24.5	10	14	10	17.0	30.1
PTZ24B	24	25.8	27.6	10	16	10	19.0	27.1
PTZ27B	27	28.9	30.8	10	16	10	21.0	24.2
PTZ30B	30	32	34	10	18	10	23.0	21.9
PTZ33B	33	34.9	37	10	18	10	25.0	20
PTZ36B	36	38.1	40	10	20	10	27.0	18.4

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

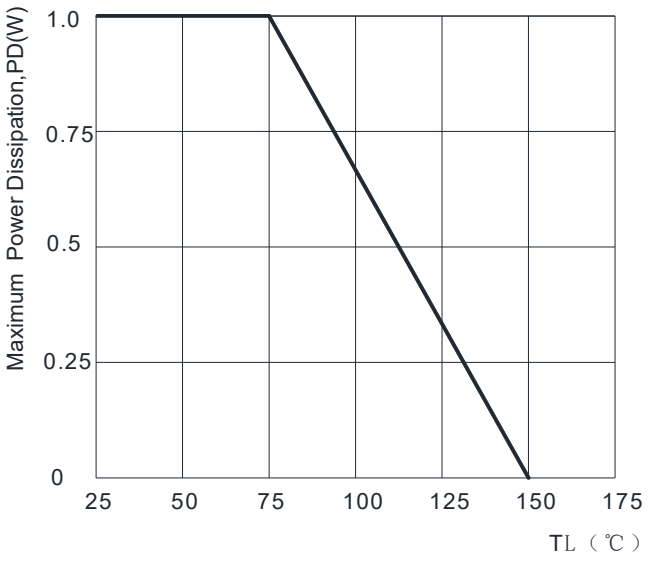
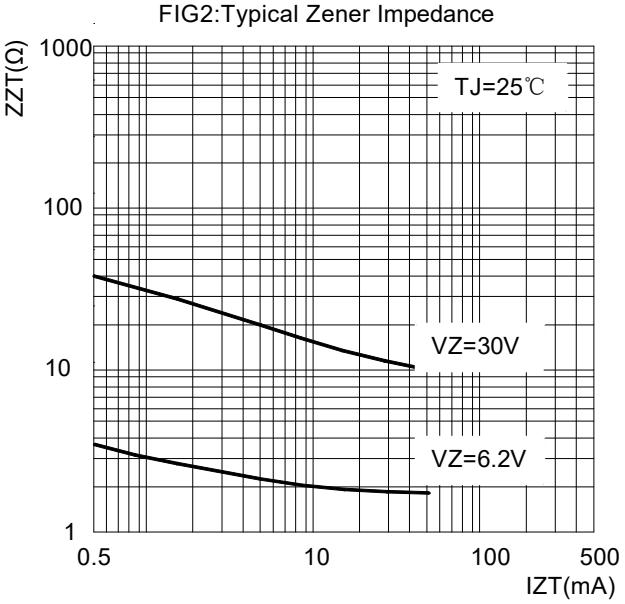


FIG2:Typical Zener Impedance



■ Characteristics (Typical)

FIG3: Pulse Waveform

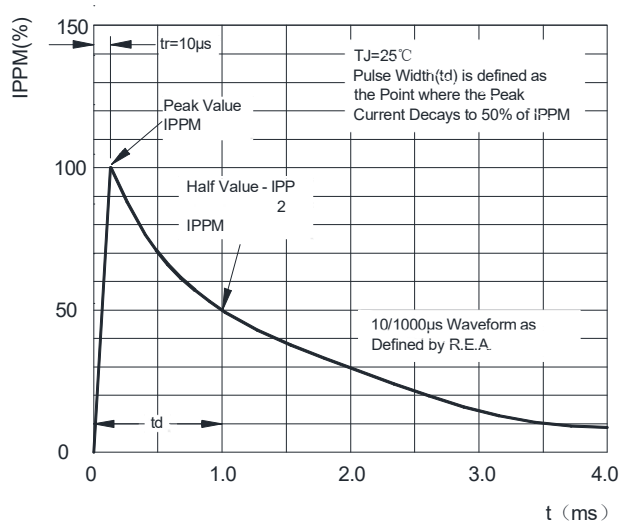


FIG4:Temperature Coefficients v.s. Zener Voltage

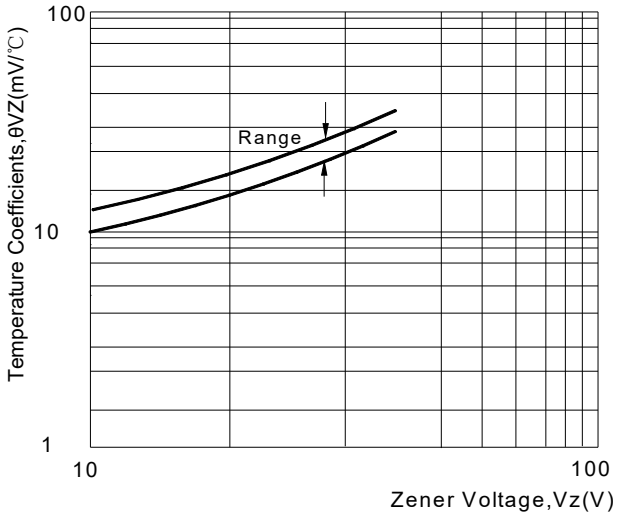
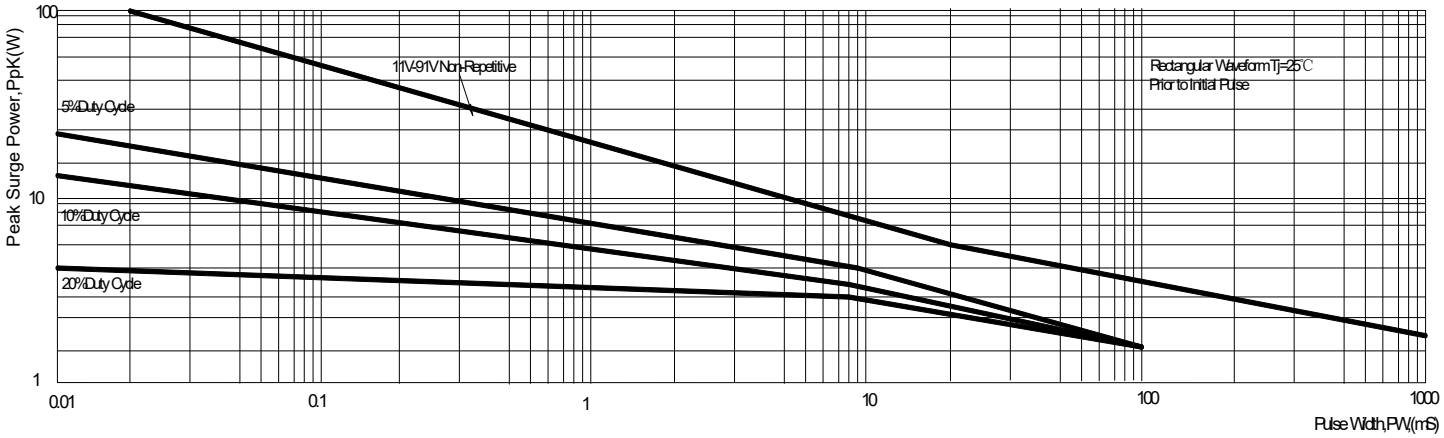


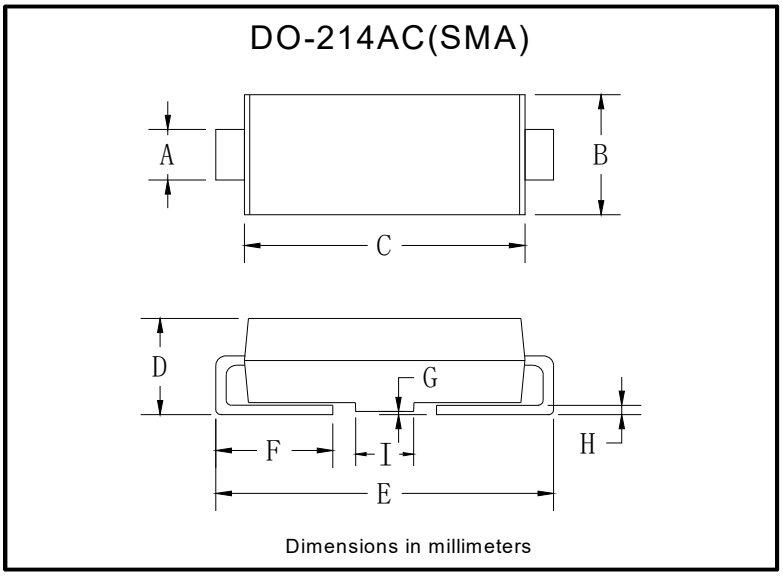
FIG5: Maximum Surge Power



■Ordering Information (Example)

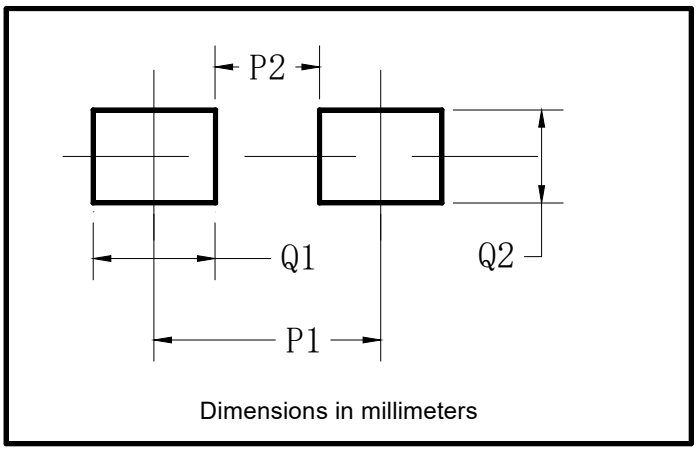
PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PTZXXB SERIES	F1	Approximate 0.059	5000	/	80000	13” reel

■ 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

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.