

Description

1SMA47 Series Zener Diodes are excellent voltage stabilization devices.

The Series is designed specifically for Voltage stabilization, Voltage regulation, and so on.



SMA (DO-214AC)

Features

- For surface mounted applications
- Low Zenser impedance
- Low regulation factor
- Epoxy resin package
- RoHS Compliant

Mechanical Characteristics

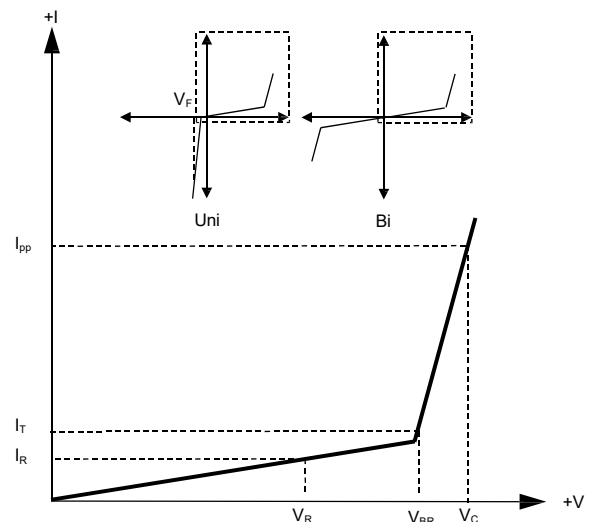
- Package: SMA (DO-214AC) plastic package.
- Lead Finish: Matte Tin
- Case Material: Epoxy Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

Applications

- Voltage stabilization
- Voltage regulation

Electrical Parameters

Parameter	Definition
C_J	Junction Capacitance - typical capacitance measured with 0V or V_R bias
I_{PP}	Peak Pulse Current - maximum rated peak impulse current
V_C	Clamping Voltage - Peak voltage measured across the suppressor at a specified I_{ppm} (peak impulse current)
V_{BR}	Breakdown Voltage - Maximum voltage that flows though the TVS at a specified test current (I_T)
I_R	Leakage Current - maximum peak off-state current measured at V_R
V_R	Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state



Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Units	Remarks
Power Dissipation @ $T_L=75^\circ\text{C}$	P_D	1	W	
Maximum Forward Voltage @ $I_F=200\text{mA}$	V_F	1.2	V	
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	30	$^\circ\text{C/W}$	
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	220	$^\circ\text{C/W}$	
Operating Temperature Range	T_J	-55 to 150	$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	-55 to 150	$^\circ\text{C}$	

Electrical Characteristics (TA=25°C unless otherwise)

Part Number	Marking Code	Zener Voltage			Test Current	Maximum Zener Impedance			Maximum Reverse Current		Maximum Zener Current
		$V_Z @ I_{ZT}$				$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$		$I_R @ V_R$		
		Nom (V)	Min (V)	Max (V)	I_{ZT} mA	Ω	Ω	mA	μA	V	mA
1SMA4733A	733A	5.1	4.8	5.4	49	7	550	1	10	1	178
1SMA4734A	734A	5.6	5.3	5.9	45	5	600	1	10	2	162
1SMA4735A	735A	6.2	5.8	6.6	41	2	700	1	10	3	146
1SMA4736A	736A	6.8	6.4	7.2	37	3.5	700	1	10	4	133
1SMA4737A	737A	7.5	7.1	7.9	34	4	700	0.5	10	5	121
1SMA4738A	738A	8.2	7.7	8.7	31	4.5	700	0.5	10	6	110
1SMA4739A	739A	9.1	8.6	9.6	28	5	700	0.5	10	7	100
1SMA4740A	740A	10	9.5	10.5	25	7	700	0.25	10	7.6	91
1SMA4741A	741A	11	10.4	11.6	23	8	700	0.25	5	8.4	83
1SMA4742A	742A	12	11.4	12.6	21	9	700	0.25	5	9.1	76
1SMA4743A	743A	13	12.3	13.7	19	10	700	0.25	5	9.9	69
1SMA4744A	744A	15	14.2	15.8	17	14	700	0.25	5	11.4	61
1SMA4745A	745A	16	15.2	16.8	15.5	16	700	0.25	5	12.2	57
1SMA4746A	746A	18	17.1	18.9	14	20	750	0.25	5	13.7	50
1SMA4747A	747A	20	19	21	12.5	22	750	0.25	5	15.2	45
1SMA4748A	748A	22	20.9	23.1	11.5	23	750	0.25	5	16.7	41
1SMA4749A	749A	24	22.8	25.2	10.5	25	750	0.25	5	18.2	38
1SMA4750A	750A	27	25.6	28.4	9.5	35	750	0.25	5	20.6	34
1SMA4751A	751A	30	28.5	31.5	8.5	40	1000	0.25	5	22.8	30
1SMA4752A	752A	33	31.3	34.7	7.5	45	1000	0.25	5	25.1	27
1SMA4753A	753A	36	34.2	37.8	7	50	1000	0.25	5	27.4	25
1SMA4754A	754A	39	37	41	6.5	60	1000	0.25	5	29.7	23
1SMA4755A	755A	43	40.8	45.2	6	70	1500	0.25	5	32.7	22
1SMA4756A	756A	47	44.6	49.4	5.5	80	1500	0.25	5	35.8	19
1SMA4757A	757A	51	48.4	53.6	5	95	1500	0.25	5	38.8	18
1SMA4758A	758A	56	53.2	58.8	4.5	110	2000	0.25	5	42.6	16
1SMA4759A	759A	62	58.9	65.1	4	125	2000	0.25	5	47.1	14
1SMA4760A	760A	68	64.6	71.4	3.7	150	2000	0.25	5	51.7	13
1SMA4761A	761A	75	71.2	78.8	3.3	175	2000	0.25	5	56	12
1SMA4762A	762A	82	77.9	86.1	3	200	3000	0.25	5	62.2	11
1SMA4763A	763A	91	86.4	95.6	2.8	250	3000	0.25	5	69.2	10
1SMA4764A	764A	100	95	105	2.5	350	3000	0.25	5	76	9

The accuracy of voltage regulator is 5%

Rating And Characteristic Curves (TA=25°C unless otherwise noted)

FIG 1: Power Temperature Derating Curve

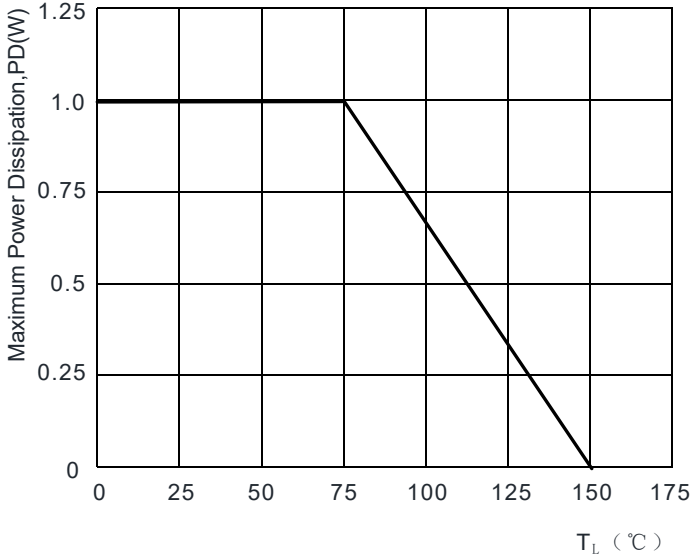


FIG2: Typical Zener Impedance

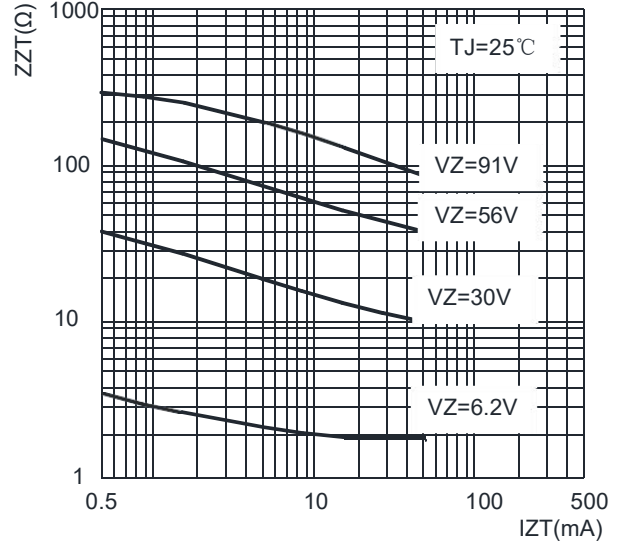


FIG3: Pulse Waveform

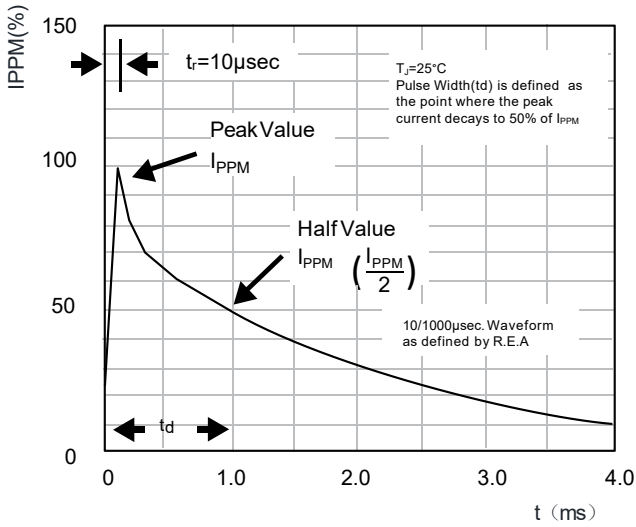
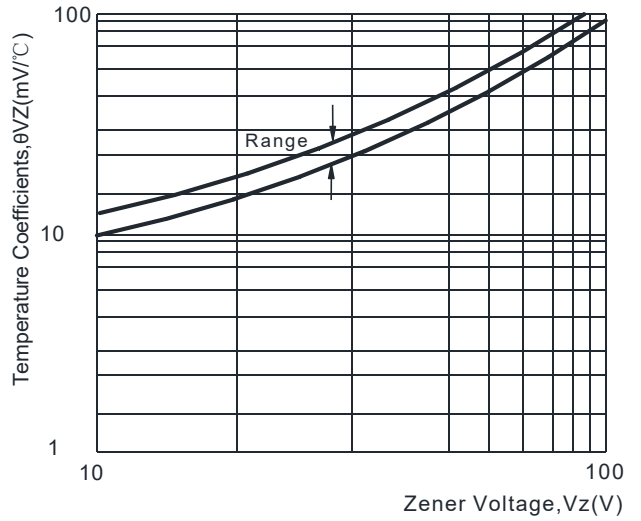
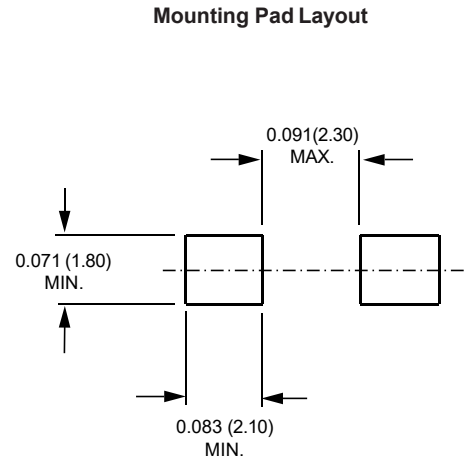
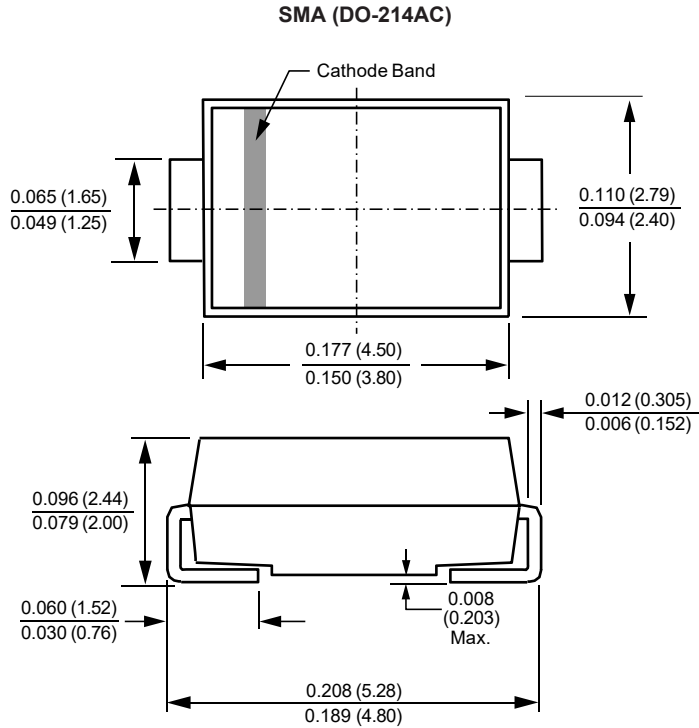


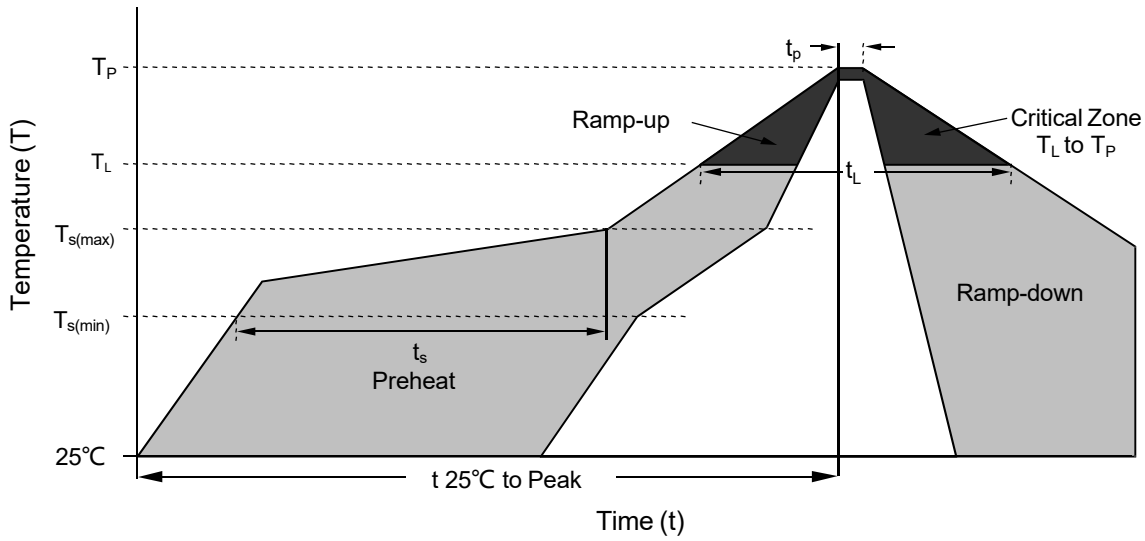
FIG4: Temperature Coefficients v.s. Zener Voltage



Package Outline Dimensions in inches (millimeters)

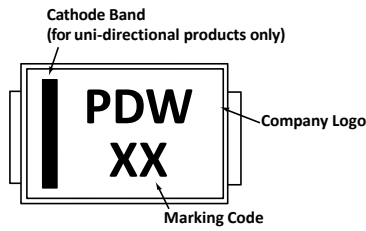


Soldering Parameters



Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	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 (t_L)	60 – 150 secs
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C

Part Marking System



Summary of Packing Options

Package	Packing Description	Packing Quantity
SMA	Tape/Reel, 7" reel	1800
	Tape/Reel, 13" reel	7500

Tape and Reel Specification

