1SMC53 SERIES

Description

1SMC53 Series Zener Diodes are excellent voltage stabilization devices.
The Series is designed specifically for Voltage stabilization、Voltage regulation, and so on.

SMC (DO-214AB)

Features

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

Mechanical Characteristics

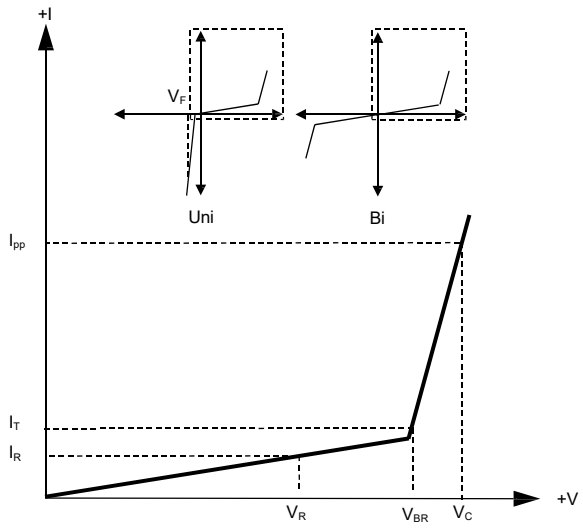
- Package: SMC (DO-214AB) plastic package.
- Lead Finish: Matte Tin
- Case Material: Epoxy Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

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 Ippm (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



Revised: 2022/04/08

Absolute Maximum Ratings (TA=25℃ unless otherwise noted)

Parameter	Symbol	Value	Units	Remarks
Power Dissipation @T_L=75℃	P_D	5	W	
Maximum Forward Voltage @I_F=200mA	V_F	1.5	V	
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	℃/W	
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	220	℃/W	
Operating Temperature Range	T_J	-55 to 150	℃	
Storage Temperature Range	T_{STG}	-55 to 150	℃	

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}			I_{ZT}	Z_{ZT} @I_{ZT}	Z_{ZK} @I_{ZK}		I_R @V_R		I_{ZM}
		Nom (V)	Min (V)	Max (V)	mA	Ω	Ω	mA	μA	V	mA
1SMC5333B	333B	3.3	3.14	3.47	380	3	400	1	300	1	1440
1SMC5334B	334B	3.6	3.42	3.78	350	2.5	500	1	150	1	1320
1SMC5335B	335B	3.9	3.71	4.10	320	2	500	1	50	1	1220
1SMC5336B	336B	4.3	4.09	4.52	290	2	500	1	10	1	1100
1SMC5337B	337B	4.7	4.47	4.94	260	2	450	1	5	1	1010
1SMC5338B	338B	5.1	4.85	5.36	240	1.5	400	1	1	1	930
1SMC5339B	339B	5.6	5.32	5.88	220	1	400	1	1	2	865
1SMC5340B	340B	6.0	5.70	6.30	200	1	300	1	1	3	790
1SMC5341B	341B	6.2	5.89	6.51	200	1	200	1	1	3	765
1SMC5342B	342B	6.8	6.46	7.14	175	1	200	1	10	5.2	700
1SMC5343B	343B	7.5	7.13	7.88	175	1.5	200	1	10	5.7	630
1SMC5344B	344B	8.2	7.79	8.61	150	1.5	200	1	10	6.2	580
1SMC5345B	345B	8.7	8.27	9.14	150	2	200	1	10	6.6	545
1SMC5346B	346B	9.1	8.65	9.56	150	2	150	1	7.5	6.9	520
1SMC5347B	347B	10	9.50	10.5	125	2	125	1	5	7.6	475
1SMC5348B	348B	11	10.45	11.55	125	2.5	125	1	5	8.4	430
1SMC5349B	349B	12	11.4	12.6	100	2.5	125	1	2	9.1	395
1SMC5350B	350B	13	12.35	13.65	100	2.5	100	1	1	9.9	365
1SMC5351B	351B	14	13.3	14.7	100	2.5	75	1	1	10.6	340
1SMC5352B	352B	15	14.25	15.75	75	2.5	75	1	1	11.5	315
1SMC5353B	353B	16	15.2	16.8	75	2.5	75	1	1	12.2	295
1SMC5354B	354B	17	16.15	17.85	70	2.5	75	1	0.5	12.9	280
1SMC5355B	355B	18	17.1	18.9	65	2.5	75	1	0.5	13.7	264
1SMC5356B	356B	19	18.05	19.95	65	3	75	1	0.5	14.4	250
1SMC5357B	357B	20	19	21	65	3	75	1	0.5	15.2	237
1SMC5358B	358B	22	20.9	23.1	50	3.5	75	1	0.5	16.7	216
1SMC5359B	359B	24	22.8	25.2	50	3.5	100	1	0.5	18.2	198
1SMC5360B	360B	25	23.75	26.25	50	4	110	1	0.5	19	190
1SMC5361B	361B	27	25.65	28.35	50	5	120	1	0.5	20.6	176
1SMC5362B	362B	28	26.6	29.4	50	6	130	1	0.5	21.2	170
1SMC5363B	363B	30	28.5	31.5	40	8	140	1	0.5	22.8	158
1SMC5364B	364B	33	31.35	34.65	40	10	150	1	0.5	25.1	144

The accuracy of voltage regulator is 5%

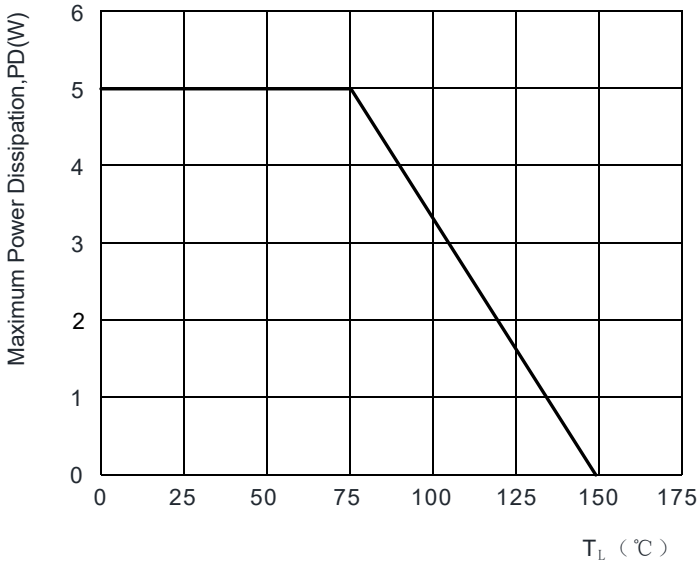
Electrical Characteristics (TA=25°C unless otherwise)

Part Number	Marking Code	Zener Voltage			Test Current	Maximum Zener Impedance			Maximum Reverse Current		Maximum Zener Current
		V_Z @ I_{ZT}			I_{ZT}	Z_{ZT} @ I_{ZT}	Z_{ZK} @ I_{ZK}		I_R @ V_R		I_{ZM}
		Nom (V)	Min (V)	Max (V)	mA	Ω	Ω	mA	μA	V	mA
1SMC5365B	365B	36	34.2	37.8	30	11	160	1	0.5	27.4	132
1SMC5366B	366B	39	37.05	40.95	30	14	170	1	0.5	29.7	122
1SMC5367B	367B	43	40.85	45.15	30	20	190	1	0.5	32.7	110
1SMC5368B	368B	47	44.65	49.35	25	25	210	1	0.5	35.8	100
1SMC5369B	369B	51	48.45	53.55	25	27	230	1	0.5	38.8	93
1SMC5370B	370B	56	53.2	58.8	20	35	280	1	0.5	42.6	86
1SMC5371B	371B	60	57	63	20	40	350	1	0.5	45.5	79
1SMC5372B	372B	62	58.9	65.1	20	42	400	1	0.5	47.1	76
1SMC5373B	373B	68	64.6	71.4	20	44	500	1	0.5	51.7	70
1SMC5374B	374B	75	71.25	78.75	20	45	620	1	0.5	56	63
1SMC5375B	375B	82	77.9	86.1	15	65	720	1	0.5	62.2	58
1SMC5377B	377B	91	86.45	95.55	15	75	760	1	0.5	69.2	52.5
1SMC5378B	378B	100	95	105	12	90	800	1	0.5	76	47.5
1SMC5380B	380B	120	114	126	10	170	1150	1	0.5	91.2	39.5
1SMC5381B	381B	130	123.5	136.5	10	190	1250	1	0.5	98.8	36.6
1SMC5383B	383B	150	142.5	157.5	8	330	1500	1	0.5	114	31.6
1SMC5384B	384B	160	152	168	8	350	1650	1	0.5	122	29.4
1SMC5386B	386B	180	171	189	5	430	1750	1	0.5	137	26.4
1SMC5387B	387B	190	180.5	199.5	5	450	1850	1	0.5	144	25
1SMC5388B	388B	200	190	210	5	480	1850	1	0.5	152	23.6

The accuracy of voltage regulator is 5%

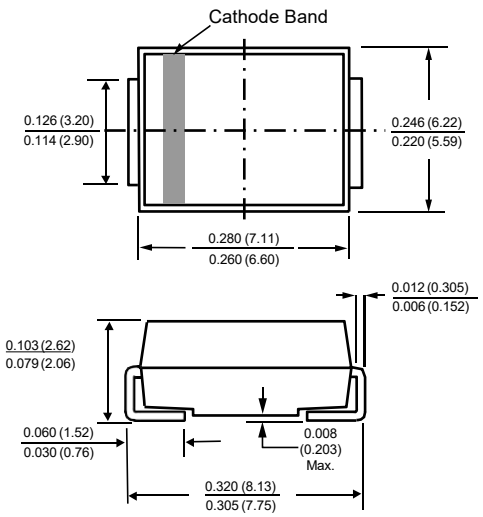
Rating And Characteristic Curves (TA=25°C unless otherwise noted)

FIG1: Maximum Continuous Power Dissipation

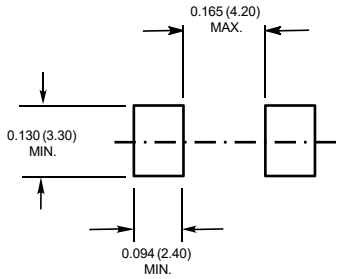


Package Outline Dimensions in inches (millimeters)

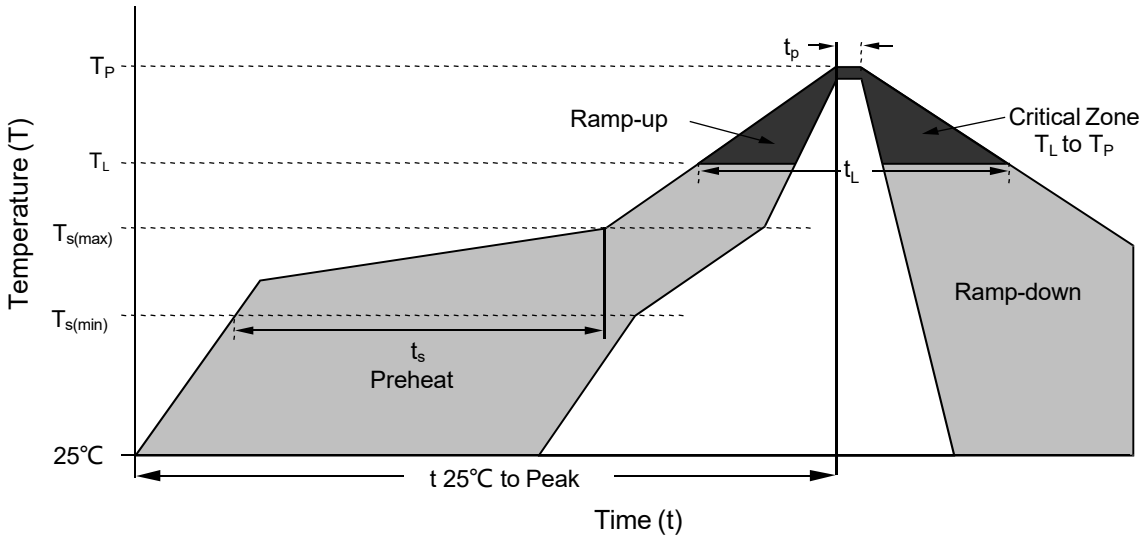
SMC (DO-214AB)



Mounting Pad Layout

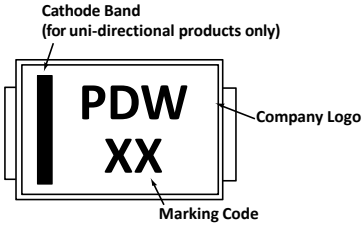


Soldering Parameters



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 TL - 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
SMC	Tape/Reel,13" reel	3000

Tape and Reel Specification