Surface Mount Zener Diodes



SMA (DO-214AC)

LINKS TO ADDITIONAL RESOURCES

3D Models

FEATURES

- Plastic package has underwriters laboratory flammability classification 94 V-0
- For surface mounted applications
- Low Zener impedance
- Low regulation factor
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Standard voltage tolerance is ± 10 %, suffix A ± 5 %
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

MECHANICAL DATA

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified ("_X" denotes revision code e.g. A, B, ...)

PRIMARY CHARACTERISTICS		
PARAMETER	VALUE	UNIT
V_Z range nom.	8.2 to 100	V
Test current I_{ZT}	2.5 to 31	mA
V_Z specification	Pulse current	
Circuit configuration	Single	

ORDERING INFORMATION			
DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
SML4738 to SML4764A	SML4738-E3/5A	7500 (12 mm tape on 13" plastic reel)	7500
	SML4738HE3_A/I		
SML4738 to SML4764A	SML4738-E3/61	1800 (12 mm tape on 7" plastic reel)	1800
	SML4738HE3_A/H		

PACKAGE				
PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SMA (DO-214AC)	64 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	Peak temperature max. 260 °C

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation	T_L = 75 °C	P_{tot}	1000	mW
Junction temperature		T_j	150	°C
Storage temperature range		T_{stg}	-65 to +150	°C

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE	TEST CURRENT		REVERSE CURRENT		DYNAMIC RESISTANCE		SURGE CURRENT (1)
		V_Z at I_{ZT1}	I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1}	Z_{ZK} at I_{ZT2}	I_{RM}
		V	mA		µA	V	Ω		mA_{pk}
		NOM.			MAX.		MAX.	MAX.	MAX.
SML4738	8P2	8.2	31	0.5	10	6	4.5	700	550
SML4739	9P1	9.1	28	0.5	10	7	5	700	500
SML4740	10	10	25	0.25	10	7.6	7	700	454
SML4741	11	11	23	0.25	5	8.4	8	700	414
SML4742	12	12	21	0.25	5	9.1	9	700	380
SML4743	13	13	19	0.25	5	9.9	10	700	344
SML4744	15	15	17	0.25	5	11.4	14	700	305
SML4745	16	16	15.5	0.25	5	12.2	16	700	285
SML4746	18	18	14	0.25	5	13.7	20	750	250
SML4747	20	20	12.5	0.25	5	15.2	22	750	225
SML4748	22	22	11.5	0.25	5	16.7	23	750	205
SML4749	24	24	10.5	0.25	5	18.2	25	750	190
SML4750	27	27	9.5	0.25	5	20.6	35	750	170
SML4751	30	30	8.5	0.25	5	22.8	40	1000	150
SML4752	33	33	7.5	0.25	5	25.1	45	1000	135
SML4753	36	36	7	0.25	5	27.4	50	1000	125
SML4754	39	39	6.5	0.25	5	29.7	60	1000	115
SML4755	43	43	6	0.25	5	32.7	70	1500	110
SML4756	47	47	5.5	0.25	5	35.8	80	1500	95
SML4757	51	51	5	0.25	5	38.8	95	1500	90
SML4758	56	56	4.5	0.25	5	42.6	110	2000	80
SML4759	62	62	4	0.25	5	47.1	125	2000	70
SML4760	68	68	3.7	0.25	5	51.7	150	2000	65
SML4761	75	75	3.3	0.25	5	56	175	2000	60
SML4762	82	82	3	0.25	5	62.2	200	3000	55
SML4763	91	91	2.8	0.25	5	69.2	250	3000	50
SML4764	100	100	2.5	0.25	5	76	350	3000	45

Note

(1) Surge current is a non-repetitive, 8.3 ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC® method

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ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE	TEST CURRENT		REVERSE CURRENT		DYNAMIC RESISTANCE		SURGE CURRENT (1)
		V_Z at I_{ZT1}	I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1}	Z_{ZK} at I_{ZT2}	I_{RM}
		V	mA		µA	V	Ω		mA_{pk}
		NOM.			MAX.		MAX.	MAX.	MAX.
SML4738A	8P2A	8.2	31	0.5	10	6	4.5	700	550
SML4739A	9P1A	9.1	28	0.5	10	7	5	700	500
SML4740A	10A	10	25	0.25	10	7.6	7	700	454
SML4741A	11A	11	23	0.25	5	8.4	8	700	414
SML4742A	12A	12	21	0.25	5	9.1	9	700	380
SML4743A	13A	13	19	0.25	5	9.9	10	700	344
SML4744A	15A	15	17	0.25	5	11.4	14	700	305
SML4745A	16A	16	15.5	0.25	5	12.2	16	700	285
SML4746A	18A	18	14	0.25	5	13.7	20	750	250
SML4747A	20A	20	12.5	0.25	5	15.2	22	750	225
SML4748A	22A	22	11.5	0.25	5	16.7	23	750	205
SML4749A	24A	24	10.5	0.25	5	18.2	25	750	190
SML4750A	27A	27	9.5	0.25	5	20.6	35	750	170
SML4751A	30A	30	8.5	0.25	5	22.8	40	1000	150
SML4752A	33A	33	7.5	0.25	5	25.1	45	1000	135
SML4753A	36A	36	7	0.25	5	27.4	50	1000	125
SML4754A	39A	39	6.5	0.25	5	29.7	60	1000	115
SML4755A	43A	43	6	0.25	5	32.7	70	1500	110
SML4756A	47A	47	5.5	0.25	5	35.8	80	1500	95
SML4757A	51A	51	5	0.25	5	38.8	95	1500	90
SML4758A	56A	56	4.5	0.25	5	42.6	110	2000	80
SML4759A	62A	62	4	0.25	5	47.1	125	2000	70
SML4760A	68A	68	3.7	0.25	5	51.7	150	2000	65
SML4761A	75A	75	3.3	0.25	5	56	175	2000	60
SML4762A	82A	82	3	0.25	5	62.2	200	3000	55
SML4763A	91A	91	2.8	0.25	5	69.2	250	3000	50
SML4764A	100A	100	2.5	0.25	5	76	350	3000	45

Note

(1) Surge current is a non-repetitive, 8.3 ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC® method

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BASIC CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

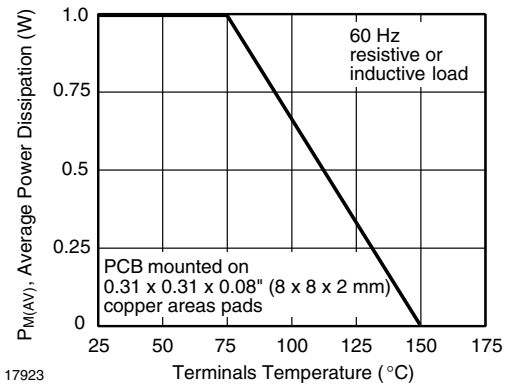


Fig. 1 - Maximum Continuous Power Dissipation

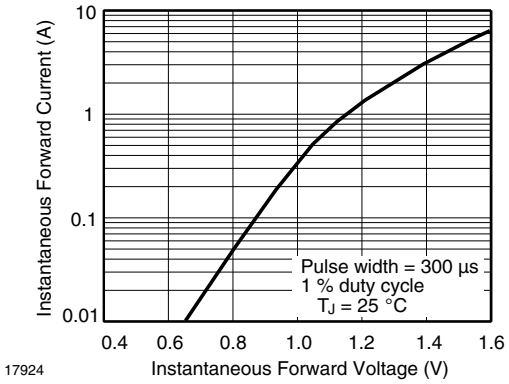


Fig. 4 - Typical Instantaneous Forward Characteristics for SML4763

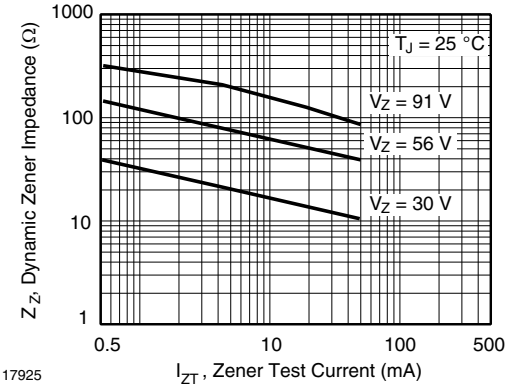


Fig. 2 - Typical Zener Impedance

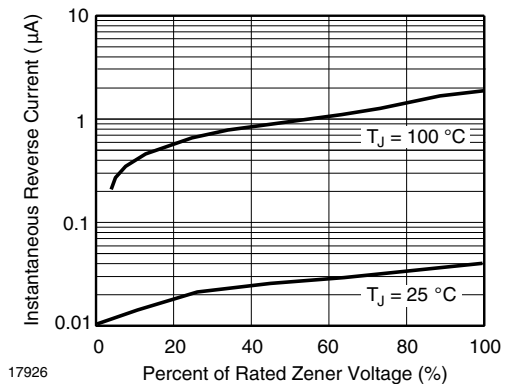


Fig. 5 - Typical Reverse Characteristics

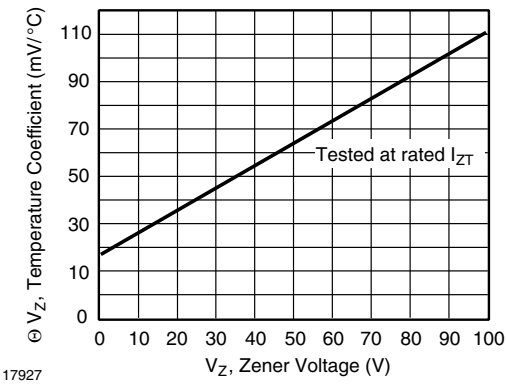
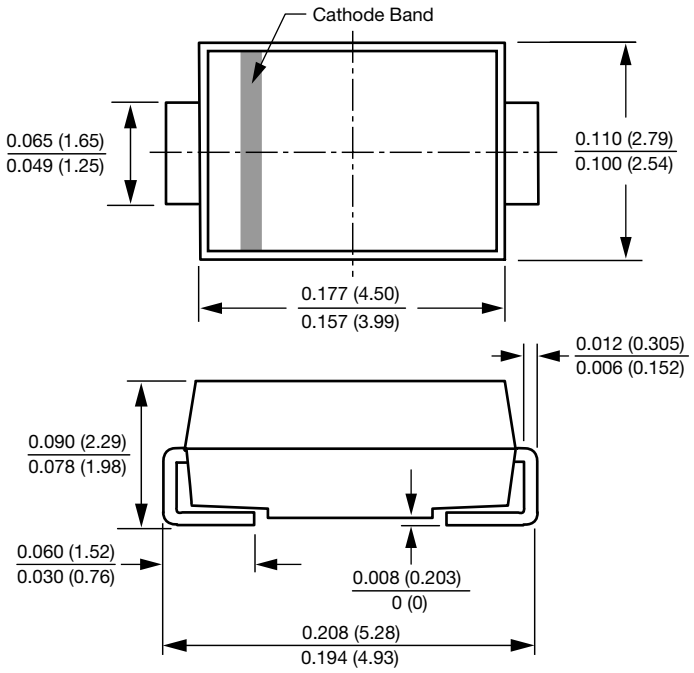


Fig. 3 - Typical Temperature Coefficients

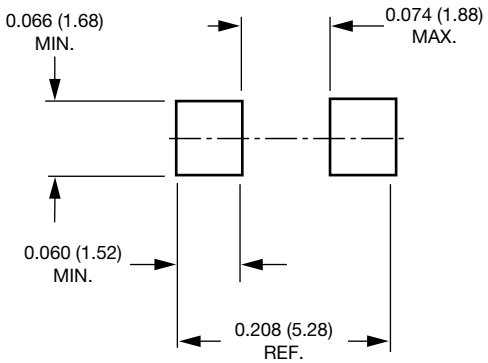
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PACKAGE DIMENSIONS in inches (millimeters): **SMA (DO-214AC)**

SMA (DO-214AC)



Mounting Pad Layout



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