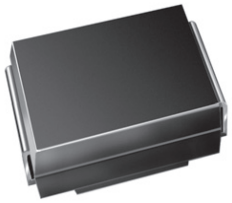
Surface Mount Power Voltage-Regulating Diodes



SMB (DO-214AA)

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Low Zener impedance
- Low regulation factor
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHE3 or base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE Available

PRIMARY CHARACTERISTICS	
V_Z	9.1 V to 68 V
P_{tot}	1500 mW
I_R ($V_Z \geq 12$ V)	5.0 µA
T_J max.	150 °C
V_Z specification	Pulse current
Circuit configuration	Single

TYPICAL APPLICATIONS

For general purpose regulation, industrial, and protection applications.

MECHANICAL DATA

Case: SMB (DO-214AA)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS-compliant, commercial grade
Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade
Base P/NHE3_X - RoHS-compliant and AEC-Q101 qualified
Base P/NHM3_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified
("_X" denotes revision code e.g. A, B, ...)

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PART NUMBER (1)	DEVICE MARKING CODE	ZENER VOLTAGE RANGE			TEST CURRENT		MAXIMUM ZENER IMPEDANCE		MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT (1)
		V_Z AT I_{ZT}			I_{ZT}	I_{ZK}	Z_{ZT} AT I_{ZT}	Z_{ZK} AT I_{ZK}	I_R AT V_R		I_{ZM}
		V			mA		Ω		µA	V	mA
		MIN.	NOM.	MAX.			MAX.	MAX.	MAX.		MAX.
SMZJ3788B	VL	8.65	9.1	9.56	41.2	0.50	4.0	1000	50	7.0	140
SMZJ3789B	WB	9.50	10	10.5	37.5	0.25	5.0	1000	50	7.6	125
SMZJ3790B	WD	10.5	11	11.6	34.1	0.25	6.0	650	10	8.4	115
SMZJ3791B	WF	11.4	12	12.6	31.2	0.25	7.0	550	5.0	9.1	105
SMZJ3792B	WH	12.4	13	13.7	28.8	0.25	7.5	550	5.0	9.9	98
SMZJ3793B	WJ	14.3	15	15.8	25.0	0.25	9.0	600	5.0	11.4	85
SMZJ3794B	WL	15.2	16	16.8	23.4	0.25	10.0	600	5.0	12.2	80
SMZJ3795B	XB	17.1	18	18.9	20.8	0.25	12.0	650	5.0	13.7	70
SMZJ3796B	XD	19.0	20	21.0	18.7	0.25	14.0	650	5.0	15.2	62
SMZJ3797B	XF	20.9	22	23.1	17.0	0.25	17.5	650	5.0	16.7	56
SMZJ3798B	XH	22.8	24	25.2	15.6	0.25	19.0	700	5.0	18.2	51
SMZJ3799B	XJ	25.7	27	28.4	13.9	0.25	23.0	700	5.0	20.6	46
SMZJ3800B	XL	28.5	30	31.5	12.5	0.25	26.0	750	5.0	22.8	41
SMZJ3801B	YB	31.4	33	34.7	11.4	0.25	33.0	800	5.0	25.1	38
SMZJ3802B	YD	34.2	36	37.8	10.4	0.25	38.0	850	5.0	27.4	35
SMZJ3803B	YF	37.1	39	41.0	9.6	0.25	45.0	900	5.0	29.7	31
SMZJ3804B	YH	40.9	43	45.2	8.7	0.25	53.0	950	5.0	32.7	28
SMZJ3805B	YJ	44.7	47	49.4	8.0	0.25	67.0	1000	5.0	35.8	26
SMZJ3806B	YL	48.5	51	53.6	7.3	0.25	70.0	1100	5.0	38.8	24
SMZJ3807B	ZB	53.2	56	58.8	6.7	0.25	86.0	1300	5.0	42.6	22
SMZJ3808B	ZD	58.9	62	65.1	6.0	0.25	100.0	1500	5.0	47.1	20
SMZJ3809B	ZF	64.6	68	71.4	5.5	0.25	120.0	1700	5.0	51.7	18

Note

(1) Maximum steady state power dissipation is 1500 mW at T_L = 75 °C (fig. 1)

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SMZJ3788B-E3/52	0.106	52	750	7" diameter plastic tape and reel
SMZJ3788B-M3/52				
SMZJ3788B-E3/5B	0.106	5B	3200	13" diameter plastic tape and reel
SMZJ3788B-M3/5B				
SMZJ3788BHE3_B/H (1)	0.106	H	750	7" diameter plastic tape and reel
SMZJ3788BHM3_B/H (1)				
SMZJ3788BHE3_B/I (1)	0.106	I	3200	13" diameter plastic tape and reel
SMZJ3788BHM3_B/I (1)				

Note

(1) AEC-Q101 qualified

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

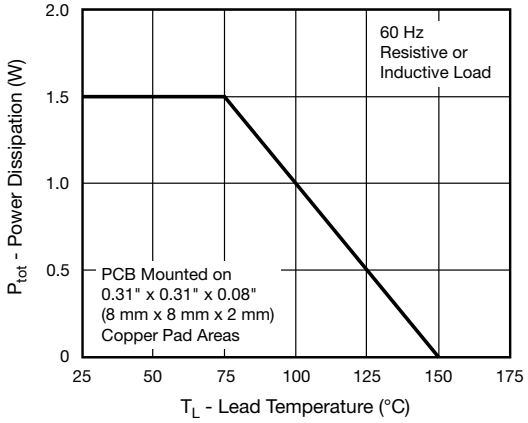


Fig. 1 - Maximum Continuous Power Dissipation

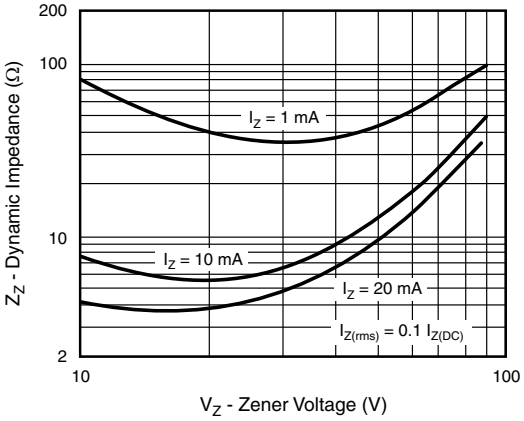


Fig. 3 - Typical Zener Impedance

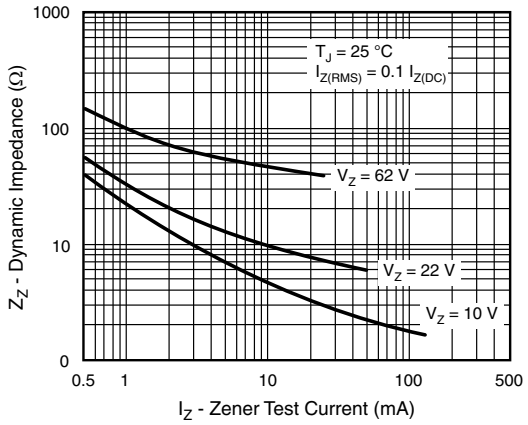


Fig. 2 - Typical Zener Impedance

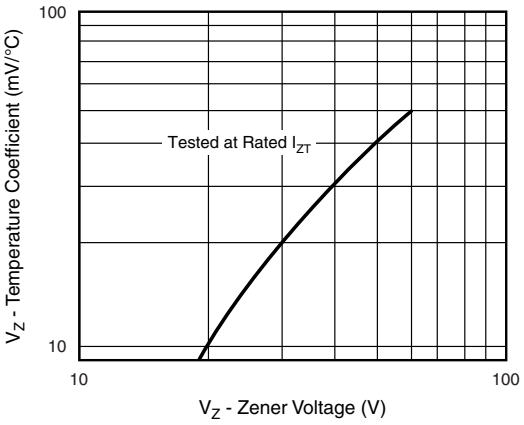
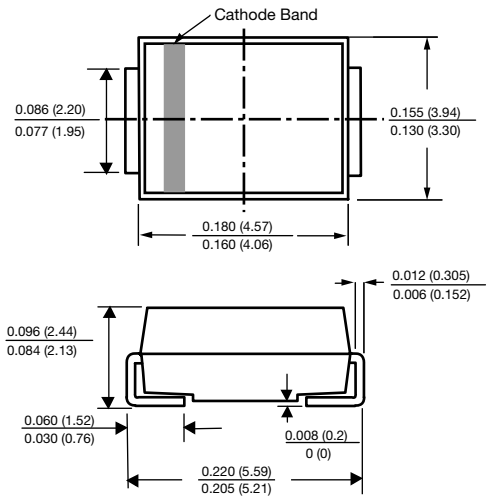


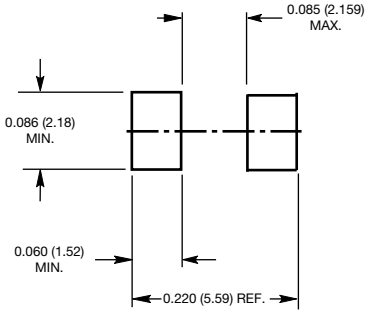
Fig. 4 - Typical Temperature Coefficients

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMB (DO-214AA)



Mounting Pad Layout



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