

Surface mount zener diode

U1ZB3.3--U1ZB390

FEATURES



Lead-free

- Silicon planar power zener diodes
- For use in stabilizing and clipping circuits with high power rating.
- Standard zener voltage tolerance is $\pm 10\%$. Add suffix "A" for $\pm 5\%$ tolerance. Other zener voltage and tolerances are available upon request.



APPLICATIONS

- Case: DO-214AC
- Terminals: Solderable per MIL-STD-202, method 208
- Polarity: Cathode band
- Marking: Type number

MAXIMUM RATING AND CHARACTERISTICS

Ratings at 25 ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Power dissipation at $T_{amb}=25^{\circ}\text{C}$	P_{tot}	1.0 ⁽¹⁾	W
Junction temperature	T_J	-40---+150	$^{\circ}\text{C}$
Storage temperature range	T_s	-40---+150	$^{\circ}\text{C}$

Notes: (1) Valid provided that leads at a distance of 10 mm from case are kept at ambient temperature.



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ELECTRICAL CHARACTERISTICS @ T_A=25°C unless otherwise specified

Type	Marking Code	Nominal Zener Voltage					Temperature Coefficient of Zener Voltage		Forward Voltage		Reverse Current	
		Zener Voltage V _Z V			Zener Impedance Z _{ZT} Ω	Measurement Current I _{ZT} mA	αV _Z mV/°C		V _F V	Measurement Current I _F A	I _R μA	Measurement Voltage V _R V
		Min	Typ	Max	Max.	mA	Typ.	Max.	Max	A	Max	V
U1ZB3.3	ZB3.3	3.0	3.3	3.6	60	10	--	--	1.2	0.2	10	1.0
U1ZB4.7	ZB4.7	4.3	4.7	5.2	60	10	--	--	1.2	0.2	10	1.0
U1ZB5.1	ZB5.1	4.6	5.1	5.6	60	10	--	--	1.2	0.2	10	1.5
U1ZB5.6	ZB5.6	5.1	5.6	6.2	60	10	--	--	1.2	0.2	10	2.5
U1ZB6.2	ZB6.2	5.6	6.2	6.9	60	10	--	--	1.2	0.2	10	3.0
U1ZB6.8	ZB6.8	6.2	6.8	7.4	60	10	3.0	4.0	1.2	0.2	10	3.0
U1ZB7.5	ZB7.5	6.8	7.5	8.3	30	10	4.0	5.0	1.2	0.2	10	4.5
U1ZB8.2	ZB8.2	7.4	8.2	9.1	30	10	4.0	6.0	1.2	0.2	10	4.9
U1ZB9.1	ZB9.1	8.2	9.1	10.1	30	10	5.0	8.0	1.2	0.2	10	5.5
U1ZB10	ZB10	9.0	10	11.0	30	10	6.0	9.0	1.2	0.2	10	6.0
U1ZB11	ZB11	9.9	11	12.1	30	10	7.0	11	1.2	0.2	10	7.0
U1ZB12	ZB12	10.8	12	13.2	30	10	8.0	13	1.2	0.2	10	8.0
U1ZB13	ZB13	11.7	13	14.3	30	10	9.0	14	1.2	0.2	10	9.0
U1ZB15	ZB15	13.5	15	16.5	30	10	11	17	1.2	0.2	10	10
U1ZB16	ZB16	14.4	16	17.6	30	10	12	19	1.2	0.2	10	11
U1ZB18	ZB18	16.2	18	19.8	30	10	14	23	1.2	0.2	10	13
U1ZB20	ZB20	18.0	20	22.0	30	10	16	26	1.2	0.2	10	14
U1ZB22	ZB22	19.8	22	24.2	30	10	18	28	1.2	0.2	10	16
U1ZB24	ZB24	21.6	24	26.4	30	10	20	32	1.2	0.2	10	17
U1ZB27	ZB27	24.3	27	29.7	30	10	23	36	1.2	0.2	10	19
U1ZB30	ZB30	27.0	30	33.0	30	10	25	40	1.2	0.2	10	21
U1ZB33	ZB33	29.7	33	36.3	30	10	26	41	1.2	0.2	10	26.4
U1ZB36	ZB36	32.4	36	39.6	30	9.0	28	45	1.2	0.2	10	28.8
U1ZB43	ZB43	38.7	43	47.3	40	7.0	33	53	1.2	0.2	10	34.4
U1ZB47	ZB47	42.3	47	51.7	65	6.0	38	60	1.2	0.2	10	37.6
U1ZB51	ZB51	45.9	51	56.1	65	6.0	43	68	1.2	0.2	10	40.8
U1ZB68	ZB68	61.2	68	74.8	120	4.0	57	90	1.2	0.2	10	54.4
U1ZB75	ZB75	67.5	75	82.5	150	4.0	66	104	1.2	0.2	10	60
U1ZB82	ZB82	73.8	82	90.2	170	3.0	71	113	1.2	0.2	10	65.4
U1ZB100	100	90	100	110	300	3.0	87	138	1.2	0.2	10	80
U1ZB110	110	99	110	121	300	3.0	96	152	1.2	0.2	10	88
U1ZB150	150	135	150	165	450	2.0	136	212	1.2	0.2	10	120



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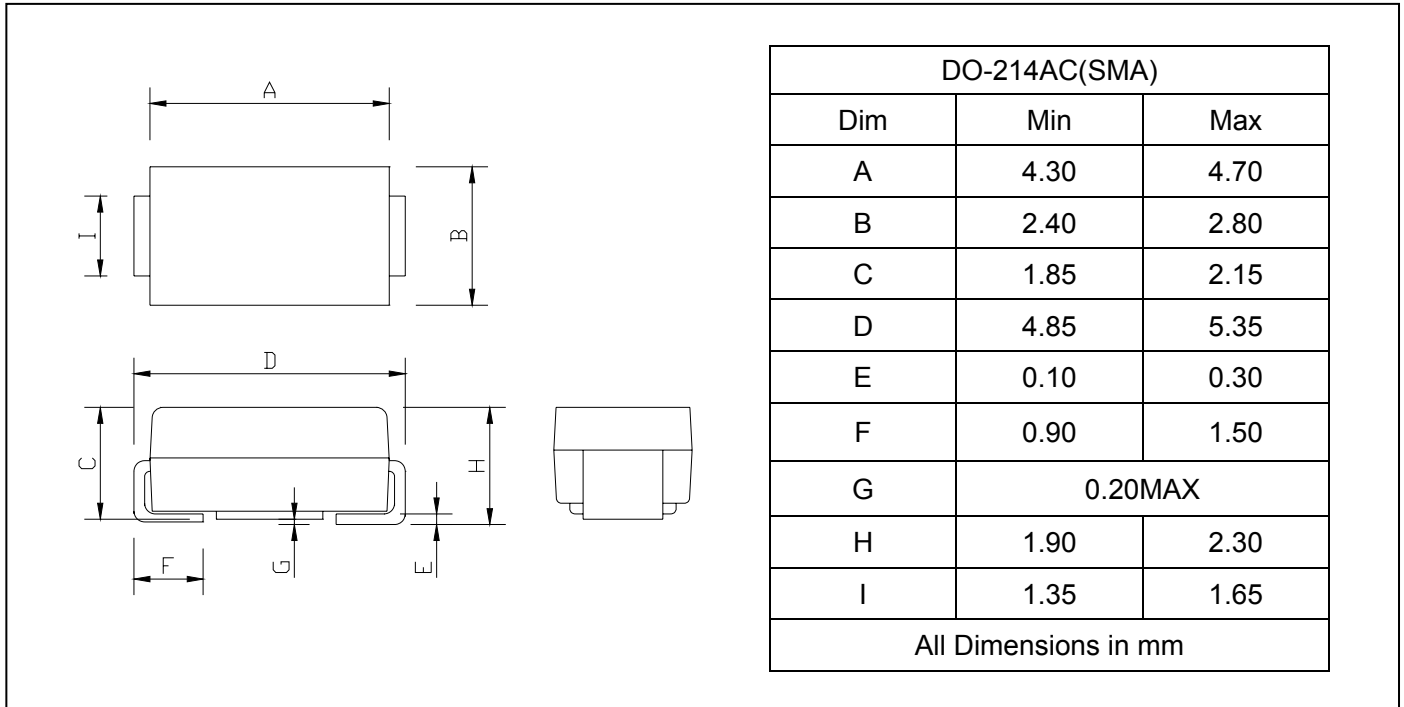
Type	Marking Code	Nominal Zener Voltage				Zener Impedance Z_{ZT} Ω	Measurement Current I_{ZT} mA	Temperature		Forward Voltage		Reverse Current	
		Zener Voltage V_z V			Coefficient of Zener Voltage αV_z mV/°C			V_F V	Measurement Current I_F A	I_R μ A	Measurement Voltage V_R V		
		Min	Typ	Max.								Typ	Max
U1ZB180	180	162	180	198	500	1.5	161	255	1.2	0.2	10	144	
U1ZB200	200	180	200	220		0.5	170	269				160	
U1ZB200-Y	200Y	190	200	210			170	269				160	
U1ZB200-Z	200Z	200	210	220			178	286				168	
U1ZB220	220	198	220	242	5000	0.5	200	309	1.2	0.2	10	176	
U1ZB220-Y	220Y	210	220	230			200	309				176	
U1ZB220-Z	220Z	220	230	240			207	320				184	
U1ZB240	240	216	240	264	5000	0.5	215	325	1.2	0.2	10	192	
U1ZB240-Y	240Y	230	240	250			215	325				216	
U1ZB240-Z	240Z	240	250	260			225	338				225	
U1ZB270	270	243	270	297	5000	0.5	243	385	1.2	0.2	10	216	
U1ZB270-X	270X	250	260	270			221	350				234	
U1ZB270-Y	270Y	260	270	280			228	362				243	
U1ZB270-Z	270Z	270	280	290			236	374				252	
U1ZB300	300	270	300	330	5000	0.5	270	428	1.2	0.2	10	240	
U1ZB300-X	300X	280	290	300			244	388				261	
U1ZB300-Y	300Y	290	300	310			253	402				270	
U1ZB300-Z	300Z	300	310	320			261	415				279	
U1ZB330	330	297	330	363	5000	0.5	296	470	1.2	0.2	10	264	
U1ZB330-X	330X	310	320	330			270	428				288	
U1ZB330-Y	330Y	320	330	340			278	441				297	
U1ZB330-Z	330Z	330	340	350			287	455				306	
U1ZB390	390	351	390	429	10000	0.5	350	555	1.2	0.2	10	312	



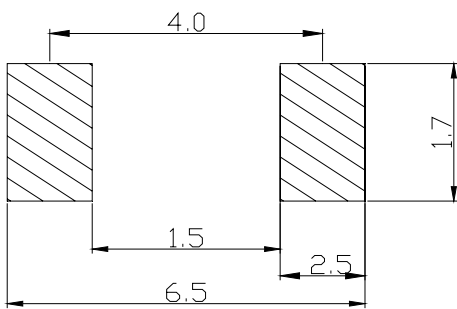
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PACKAGE OUTLINE DIMENSIONS



SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
U1ZB3.3--U1ZB390	DO-214AC(SMA)	5000/Tape&Reel

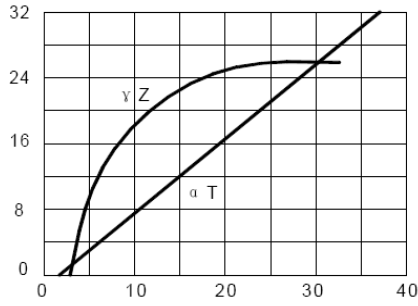


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TEMPERATURE COEFFICIENT OF ZENER VOLTAGE AT (mV/°C)

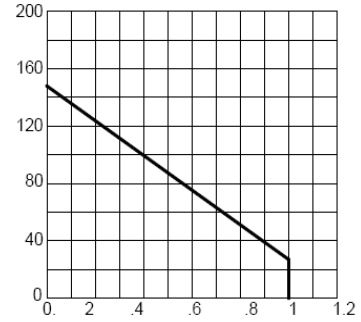
FIG.1 -- AT $Y_z - V_z$



ZENER VOLTAGE V_z (V)

MAXIMUM ALLOWABLE AMBIENT TEMPERATURE T_A MAX (°C)

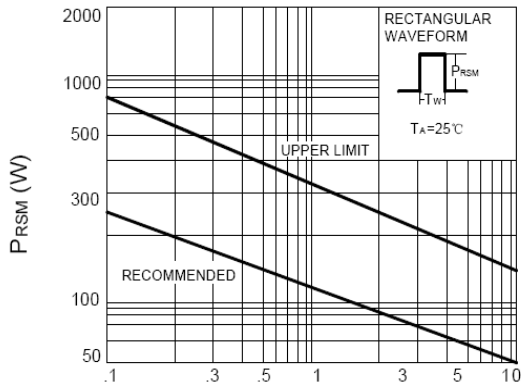
FIG.2 -- T_A MAX - P



POWER DISSIPATION P (W)

PEAK REVERSE POWER DISSIPATION

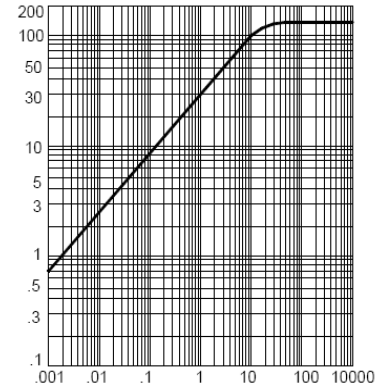
FIG.3 -- $P_{RSM} - t_w$



PULSE WIDTH t_w (ms)

TRANSIENT THERMAL IMPEDANCE $R_{\theta JA}$ (°C/W)

FIG.4 -- $R_{\theta JA} - T$



TIME T (S)