

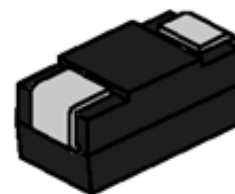


Zener Diodes with Surge Current Specification: SMAZKCxxAU

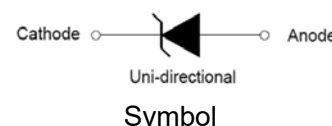
Rev.1.4

FEATURE

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 1500mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 6.8V to 200V with $\pm 5\%$ for SMAZKCxxAU series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ For use in stabilizing and clamping circuits with high power rating.
- ✧ AEC-Q101 qualified.



SMA



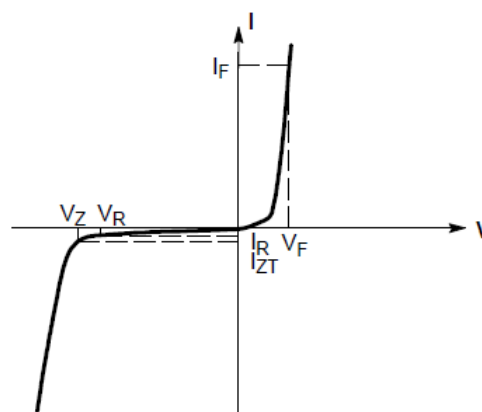
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @75°C	P_D	1500	mW
Thermal resistance junction to ambient (Note1)	$R_{\theta JA}$	250	°C/W
Junction temperature	T_J	150	°C
Storage temperature range	T_S	-55 to+150	°C
Operating temperature range	T_{op}	-55 to+150	°C
Peak pulse power dissipation at 10/1000µs waveform	P_{PP}	300	W

Note1: Mounted on minimum recommended pad layout

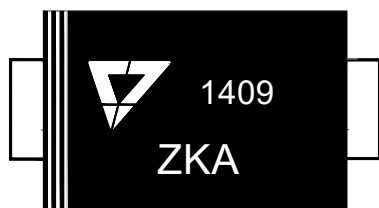
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$)

Symbol	Parameter
V_Z	Reverse zener voltage at I_{zt}
I_{zt}	Reverse current
I_R	Reverse leakage current at V_R
V_R	Reverse voltage
I_F	Forward current
V_F	Forward voltage at I_F



Zener voltage regulator

MARKING



ZKA: Device Marking Code
1409: In ninth week, 2014

SMAZKCxxAU ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Maximum $V_F=1.2\text{V}$ at $I_F=200\text{mA}$

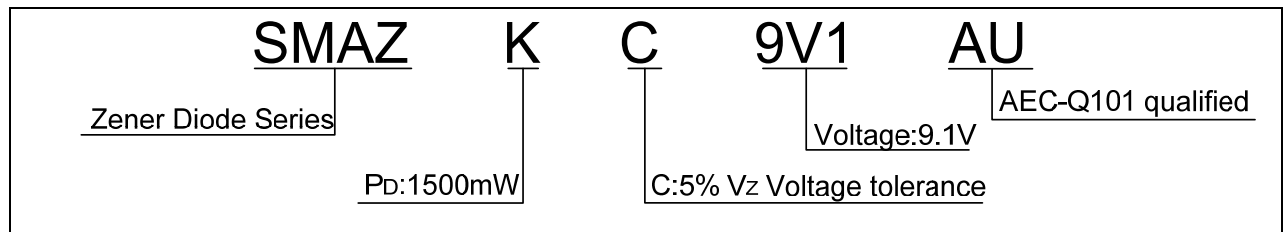
Type number	Zener voltage range at I_{zt}				Maximum zener impedance			Maximum reverse leakage current		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (Volts)	
SMAZKC6V8AU	6.8	6.46	7.14	55.1	2.5	400	1.0	20	5.2	ZKA
SMAZKC7V5AU	7.5	7.13	7.88	50.0	2.5	400	1.0	10	6.0	ZKB
SMAZKC8V2AU	8.2	7.79	8.61	45.7	5.0	700	0.5	10	6.5	ZKC
SMAZKC9V1AU	9.1	8.65	9.56	41.2	5.0	700	0.5	10	7.0	ZKD
SMAZKC10AU	10	9.5	10.5	37.5	5.0	700	0.25	10	8.0	ZKE
SMAZKC11AU	11	10.5	11.6	34.1	5.5	550	0.25	5	8.4	ZKF
SMAZKC12AU	12	11.4	12.6	31.2	6.5	550	0.25	1	9.1	ZKG
SMAZKC13AU	13	12.4	13.7	28.8	7.0	550	0.25	1	9.9	ZKH
SMAZKC15AU	15	14.3	15.8	25.0	9.0	600	0.25	1	11.4	ZKI
SMAZKC16AU	16	15.2	16.8	23.4	10	600	0.25	1	12.2	ZKJ
SMAZKC18AU	18	17.1	18.9	20.8	12	650	0.25	1	13.7	ZKK
SMAZKC20AU	20	19	21	18.7	14	650	0.25	1	15.2	ZKL
SMAZKC22AU	22	20.9	23.1	17.0	17.5	650	0.25	1	16.7	ZKM
SMAZKC24AU	24	22.8	25.2	15.6	19	700	0.25	1	18.2	ZKN
SMAZKC27AU	27	25.7	28.4	13.9	23	700	0.25	1	20.5	ZKO
SMAZKC30AU	30	28.5	31.5	12.5	28	750	0.25	1	22.8	ZKP
SMAZKC33AU	33	31.4	34.7	11.4	33	800	0.25	1	25.1	ZKQ
SMAZKC36AU	36	34.2	37.8	10.4	38	850	0.25	1	27.4	ZKR
SMAZKC39AU	39	37.1	41.0	9.6	45	900	0.25	1	29.7	ZKS
SMAZKC43AU	43	40.9	45.2	8.7	53	950	0.25	1	32.7	ZKT
SMAZKC47AU	47	44.7	49.4	8.0	67	1000	0.25	1	35.8	ZKU
SMAZKC51AU	51	48.5	53.6	7.3	70	1100	0.25	1	38.8	ZKV
SMAZKC56AU	56	53.2	58.8	6.7	86	1300	0.25	1	42.6	ZKW
SMAZKC62AU	62	58.9	65.1	6.0	100	1500	0.25	1	47.1	ZKX
SMAZKC68AU	68	64.6	71.4	5.5	120	1700	0.25	1	51.7	ZKY
SMAZKC75AU	75	71.3	78.8	5.0	140	2000	0.25	1	57.0	ZKZ
SMAZKC82AU	82	77.9	86.1	4.6	160	2500	0.25	1	62.3	ZLA

SMAZKCxxAU ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted, continued)

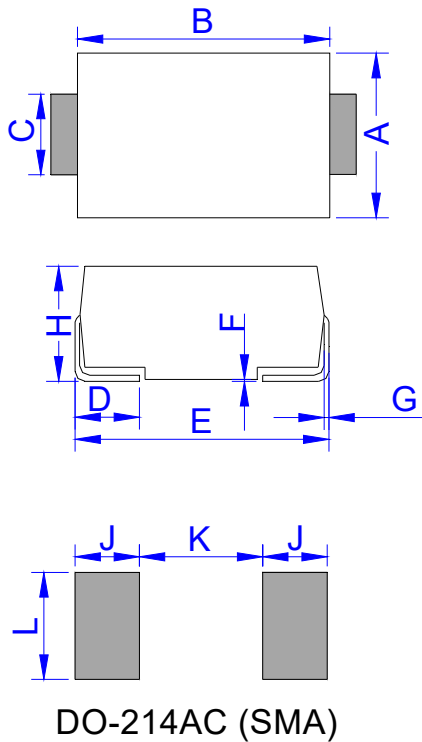
Maximum $V_F=1.2\text{V}$ at $I_F=200\text{ mA}$

Type number	Zener voltage range at I_{zt}				Maximum zener impedance			Maximum reverse leakage current		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (Volts)	
SMAZKC91AU	91	86.5	95.6	4.1	200	3000	0.25	1	69.2	ZLB
SMAZKC100AU	100	95.0	105	3.8	250	3100	0.25	1	76.0	ZLC
SMAZKC120AU	120	114	126	3.1	380	4500	0.25	1	91.2	ZLD
SMAZKC130AU	130	124	137	2.9	450	5000	0.25	1	98.8	ZLE
SMAZKC150AU	150	143	158	2.5	600	6000	0.25	1	114	ZLF
SMAZKC160AU	160	152	168	2.3	700	6500	0.25	1	122	ZLG
SMAZKC180AU	180	171	189	2.1	900	7000	0.25	1	137	ZLH
SMAZKC200AU	200	190	210	1.9	1200	8000	0.25	1	152	ZLI

ORDERING INFORMATION

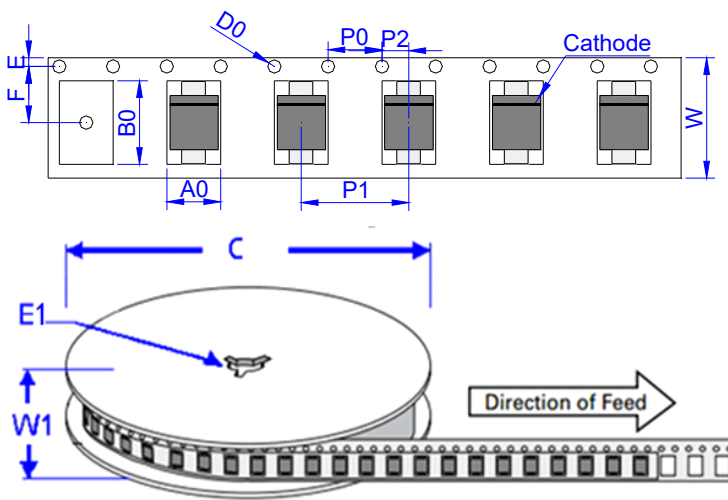


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	

TAPE AND REEL SPECIFICATION-SMA



Ref.	Dimensions	
	Millimeters	Inches
A0	2.79 ± 0.3	0.110 ± 0.012
B0	5.33 ± 0.3	0.210 ± 0.012
C	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	5.5 ± 0.2	0.217 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	15.7 ± 2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SMAZKCxxAU	0.07	7,500	120,000	13 inch reel pack

RATINGS AND CHARACTERISTICS CURVES ($T_A=25^{\circ}\text{C}$, unless otherwise noted)

Fig.1 Power dissipation vs lead temperature

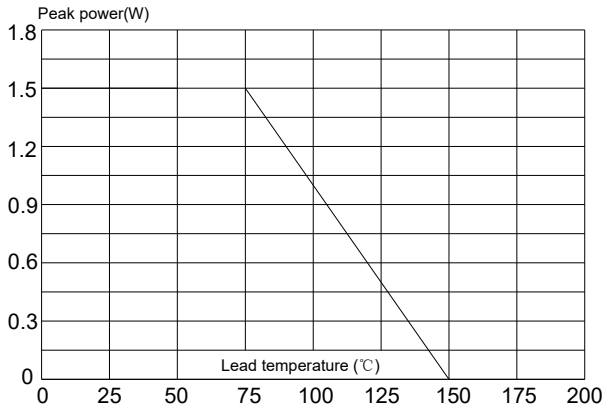


Fig.2 Zener breakdown characteristics

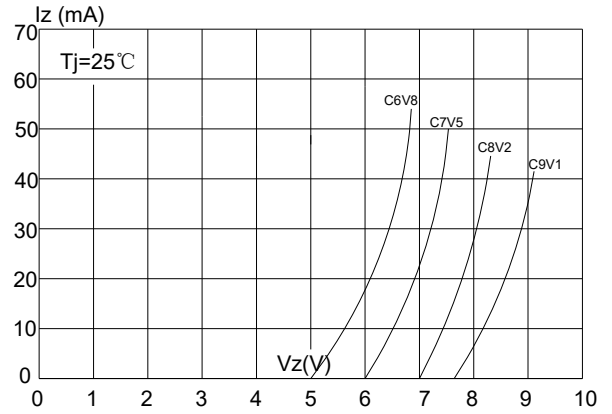


Fig.3 Zener breakdown characteristics

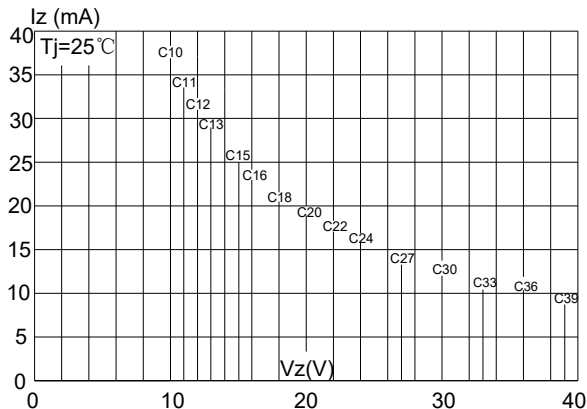


Fig.4 Zener breakdown characteristics

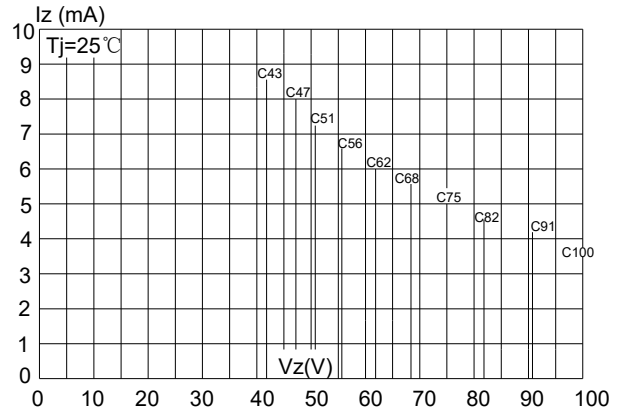
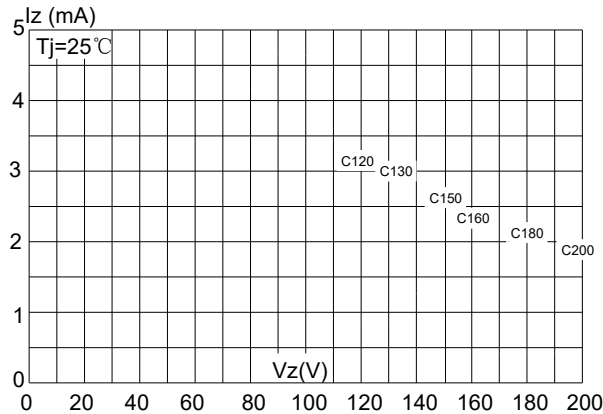


Fig.5 Zener breakdown characteristics



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