

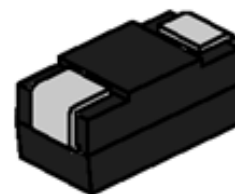


Zener Diodes with Surge Current Specification: SMAZKC Series

Rev.5.4

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 SMAZKC series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ For use in stabilizing and clamping circuits with high power rating.



SMA



Uni-directional
Symbol

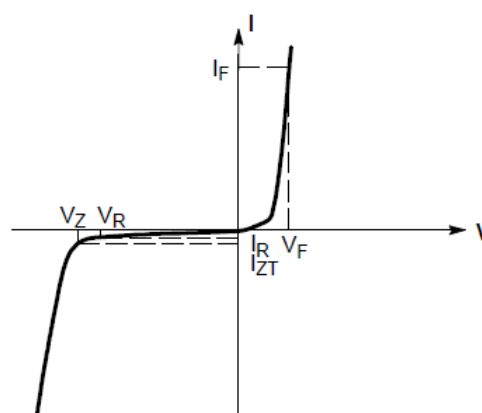
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

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 on 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
2009: In ninth week, 2020

SMAZKC 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		Junction capacitance	Marking code
	Nom (V)	Min (V)	Max (V)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (V)	Typ (pF)	
SMAZKC6V8	6.8	6.46	7.14	55.1	2.5	400	1.0	20	5.2	2600	ZKA
SMAZKC7V5	7.5	7.13	7.88	50.0	2.5	400	1.0	10	6.0	2100	ZKB
SMAZKC8V2	8.2	7.79	8.61	45.7	5.0	700	0.5	10	6.5	1800	ZKC
SMAZKC9V1	9.1	8.65	9.56	41.2	5.0	700	0.5	10	7.0	1700	ZKD
SMAZKC10	10	9.5	10.5	37.5	5.0	700	0.25	10	8.0	1300	ZKE
SMAZKC11	11	10.5	11.6	34.1	5.5	550	0.25	5	8.4	1100	ZKF
SMAZKC12	12	11.4	12.6	31.2	6.5	550	0.25	1	9.1	1000	ZKG
SMAZKC13	13	12.4	13.7	28.8	7.0	550	0.25	1	9.9	900	ZKH
SMAZKC15	15	14.3	15.8	25.0	9.0	600	0.25	1	11.4	800	ZKI
SMAZKC16	16	15.2	16.8	23.4	10	600	0.25	1	12.2	700	ZKJ
SMAZKC18	18	17.1	18.9	20.8	12	650	0.25	1	13.7	660	ZKK
SMAZKC20	20	19	21	18.7	14	650	0.25	1	15.2	600	ZKL
SMAZKC22	22	20.9	23.1	17.0	17.5	650	0.25	1	16.7	560	ZKM
SMAZKC24	24	22.8	25.2	15.6	19	700	0.25	1	18.2	520	ZKN
SMAZKC27	27	25.7	28.4	13.9	23	700	0.25	1	20.5	480	ZKO
SMAZKC30	30	28.5	31.5	12.5	28	750	0.25	1	22.8	440	ZKP
SMAZKC33	33	31.4	34.7	11.4	33	800	0.25	1	25.1	420	ZKQ
SMAZKC36	36	34.2	37.8	10.4	38	850	0.25	1	27.4	410	ZKR
SMAZKC39	39	37.1	41.0	9.6	45	900	0.25	1	29.7	360	ZKS
SMAZKC43	43	40.9	45.2	8.7	53	950	0.25	1	32.7	320	ZKT
SMAZKC47	47	44.7	49.4	8.0	67	1000	0.25	1	35.8	310	ZKU
SMAZKC51	51	48.5	53.6	7.3	70	1100	0.25	1	38.8	300	ZKV
SMAZKC56	56	53.2	58.8	6.7	86	1300	0.25	1	42.6	290	ZKW
SMAZKC62	62	58.9	65.1	6.0	100	1500	0.25	1	47.1	280	ZKX
SMAZKC68	68	64.6	71.4	5.5	120	1700	0.25	1	51.7	250	ZKY
SMAZKC75	75	71.3	78.8	5.0	140	2000	0.25	1	57.0	230	ZKZ
SMAZKC82	82	77.9	86.1	4.6	160	2500	0.25	1	62.3	225	ZLA

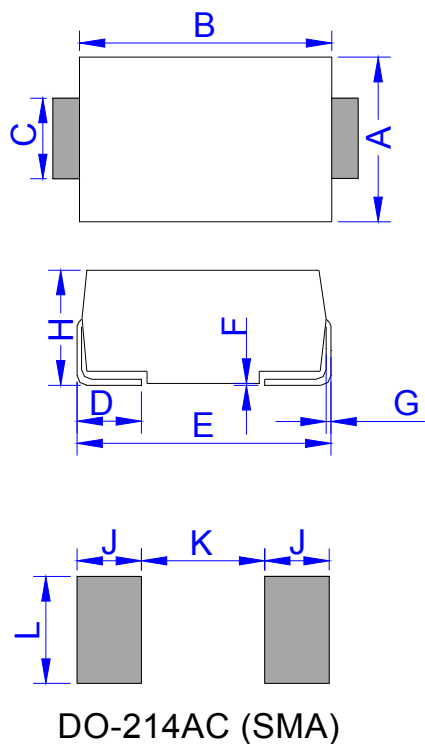
SMAZKC ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted, continued)Maximum $V_F=1.2\text{V}$ at $I_F=200\text{ mA}$

Type number	Zener voltage range at I_{zt}				Maximum zener impedance			Maximum reverse leakage current		Junction capacitance	Marking code
	Nom (V)	Min (V)	Max (V)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (V)	Typ (pF)	
SMAZKC91	91	86.5	95.6	4.1	200	3000	0.25	1	69.2	220	ZLB
SMAZKC100	100	95.0	105	3.8	250	3100	0.25	1	76.0	215	ZLC
SMAZKC120	120	114	126	3.1	380	4500	0.25	1	91.2	190	ZLD
SMAZKC130	130	124	137	2.9	450	5000	0.25	1	98.8	160	ZLE
SMAZKC150	150	143	158	2.5	600	6000	0.25	1	114	155	ZLF
SMAZKC160	160	152	168	2.3	700	6500	0.25	1	122	145	ZLG
SMAZKC180	180	171	189	2.1	900	7000	0.25	1	137	135	ZLH
SMAZKC200	200	190	210	1.9	1200	8000	0.25	1	152	125	ZLI

Notes: Junction capacitance is measured in $V_R=0\text{V}$, $f=1\text{MHz}$.**ORDERING INFORMATION**

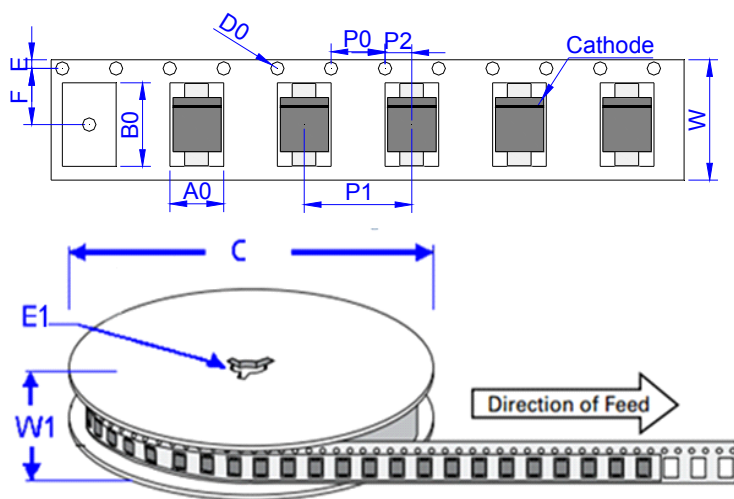
SMAZ		K	C	9V1
Zener Diode Series				Voltage:9.1V
		$P_D:1500\text{mW}$	C:5% V_Z Voltage tolerance	

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
SMAZKC Series	0.07	5,000	80,000	13 inch reel pack

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

Fig.1 Power dissipation vs lead temperature

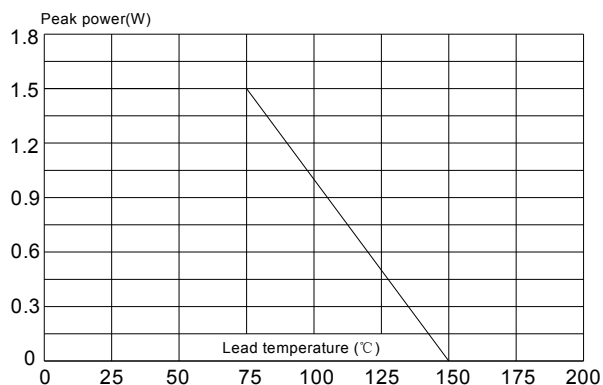


Fig.2 Zener breakdown characteristics

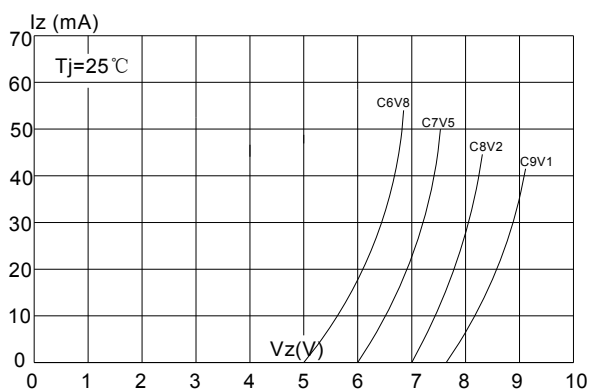


Fig.3 Zener breakdown characteristics

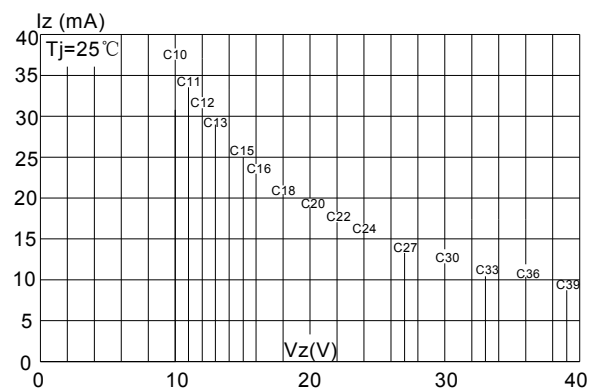


Fig.4 Zener breakdown characteristics

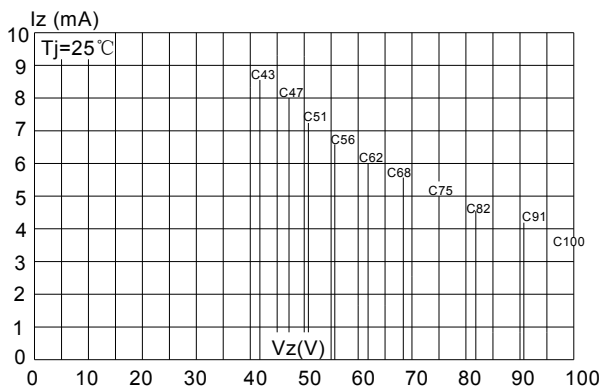


Fig.5 Zener breakdown characteristics

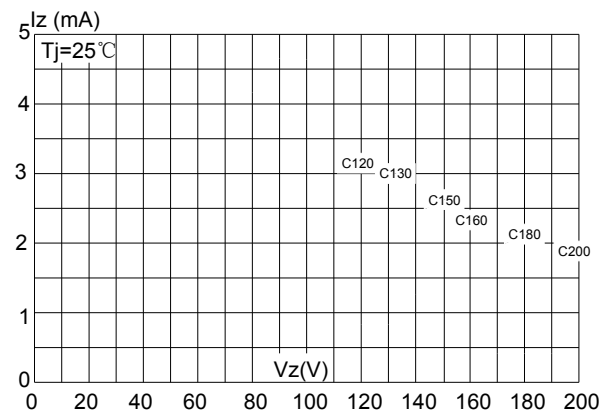
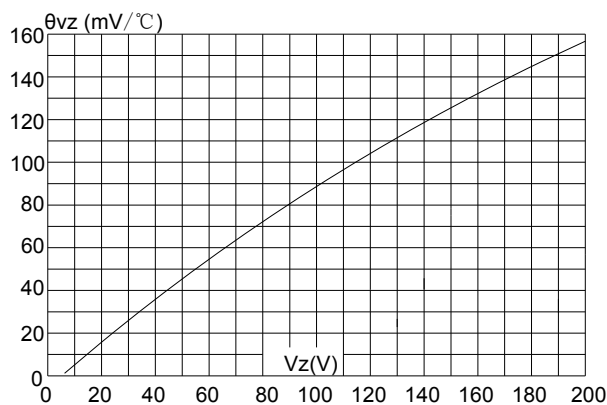


Fig.6 Temperature coefficient vs Zener voltage



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