

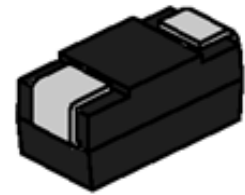


Zener Diodes with Surge Current Specification: SMAZPCxxAU

Rev.1.4

FEATURE

- ✧ Silicon power zener diodes.
- ✧ Low zener impedance.
- ✧ 2500mW rating on FR-4 or FR-5 board.
- ✧ Voltage range includes breakdown voltages from 12V to 200V with $\pm 5\%$ for SMAZPCxxAU series.
- ✧ Low profile surface-mount package.
- ✧ Zener and surge current specification.
- ✧ For use in stabilizing and clamping circuits with high power rating.
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C.
- ✧ AEC-Q101 qualified.



SMA



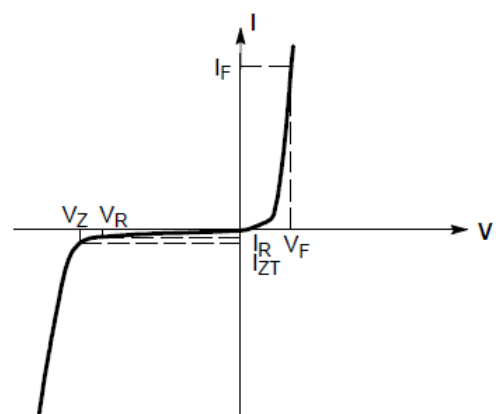
ABSOLUTE MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

Parameter	Symbol	Max Value	Unit
Total power dissipation @75°C	P_D	2500	mW
Thermal resistance junction to ambient (Note1)	$R_{\theta JA}$	200	°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}	400	W

Note1: Mounted on minimum recommended pad layout

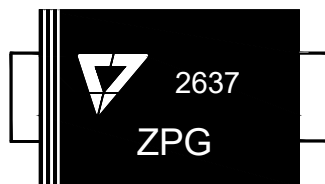
ELECTRICAL CHARACTERISTICS

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



ZPG: Device Marking Code
2637: the 37th week, 2026

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

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

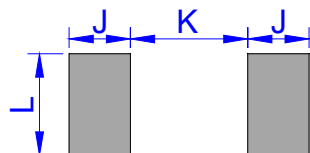
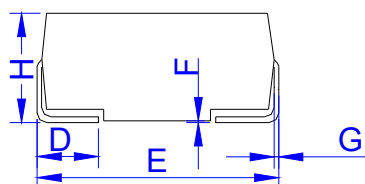
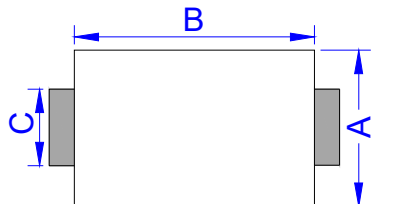
Type number	Zener voltage range at I_{zt}				Maximum zener impedance			Maximum reverse leakage current		Marking code
	Nom (Volts)	Min (Volts)	Max (Volts)	I_{zt} (mA)	Z_{zt} (Ω)	Z_{zk} (Ω)	I_{zk} (mA)	I_R (μA)	V_R (Volts)	
SMAZPC12AU	12	11.4	12.6	52	6.5	550	0.25	1	9.1	ZPG
SMAZPC13AU	13	12.4	13.7	48	7.0	550	0.25	1	9.9	ZPH
SMAZPC15AU	15	14.3	15.8	41.6	9.0	600	0.25	1	11.4	ZPI
SMAZPC16AU	16	15.2	16.8	39	10	600	0.25	1	12.2	ZPJ
SMAZPC18AU	18	17.1	18.9	34.7	12	650	0.25	1	13.7	ZPK
SMAZPC20AU	20	19	21	31.2	14	650	0.25	1	15.2	ZPL
SMAZPC22AU	22	20.9	23.1	28.4	17.5	650	0.25	1	16.7	ZPM
SMAZPC24AU	24	22.8	25.2	26	19	700	0.25	1	18.2	ZPN
SMAZPC27AU	27	25.7	28.4	23.1	23	700	0.25	1	20.5	ZPO
SMAZPC30AU	30	28.5	31.5	20.8	26	750	0.25	1	22.8	ZPP
SMAZPC33AU	33	31.4	34.7	19	33	800	0.25	1	25.1	ZPQ
SMAZPC36AU	36	34.2	37.8	17.4	38	850	0.25	1	27.4	ZPR
SMAZPC39AU	39	37.1	41.0	16	45	900	0.25	1	29.7	ZPS
SMAZPC43AU	43	40.9	45.2	14.5	53	950	0.25	1	32.7	ZPT
SMAZPC47AU	47	44.7	49.4	13.3	67	1000	0.25	1	35.8	ZPU
SMAZPC51AU	51	48.5	53.6	12.2	70	1100	0.25	1	38.8	ZPV
SMAZPC56AU	56	53.2	58.8	11.4	86	1300	0.25	1	42.6	ZPW
SMAZPC62AU	62	58.9	65.1	10.1	100	1500	0.25	1	47.1	ZPX
SMAZPC68AU	68	64.6	71.4	9.2	120	1700	0.25	1	51.7	ZPY
SMAZPC75AU	75	71.3	78.8	8.3	140	2000	0.25	1	57.0	ZPZ
SMAZPC82AU	82	77.9	86.1	7.6	160	2200	0.25	1	62.3	ZQA
SMAZPC91AU	91	84.5	95.6	6.9	180	2400	0.25	1	69.2	ZQB
SMAZPC100AU	100	95	105	6.3	200	2600	0.25	1	76.0	ZQC
SMAZPC110AU	110	105	116	5.7	300	4000	0.25	1	83.6	ZQD
SMAZPC120AU	120	114	126	5.2	380	4500	0.25	1	91.2	ZQE
SMAZPC130AU	130	124	137	4.8	450	5000	0.25	1	98.8	ZQF
SMAZPC150AU	150	143	158	4.2	600	6000	0.25	1	114	ZQG
SMAZPC160AU	160	152	168	3.9	700	6500	0.25	1	122	ZQH

SMAZPCxxAU 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)	
SMAZPC180AU	180	171	189	3.5	900	7000	0.25	1	137	ZQI
SMAZPC200AU	200	190	210	3.1	1200	8000	0.25	1	152	ZQJ

ORDERING INFORMATION

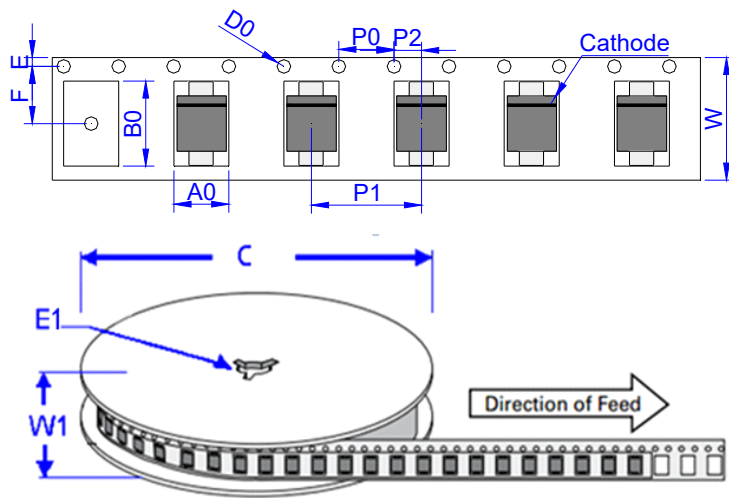
SMAZ	P	C	12	AU
Zener Diode Series	$P_D:2500\text{mW}$		Voltage:12V	AEC-Q101 qualified
	C:5% V_Z Voltage tolerance			

PACKAGE MECHANICAL DATA


DO-214AC (SMA)

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
SMAZPCxxAU	0.066	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

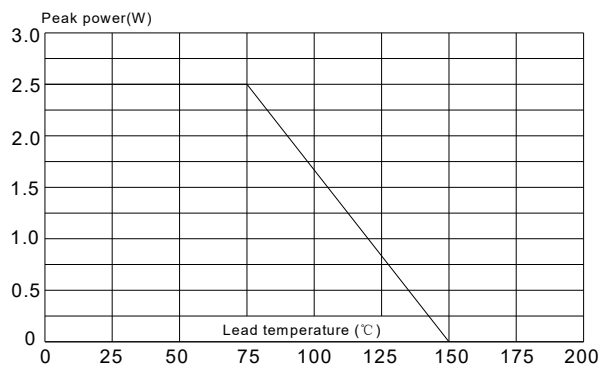


Fig.3 Zener breakdown characteristics

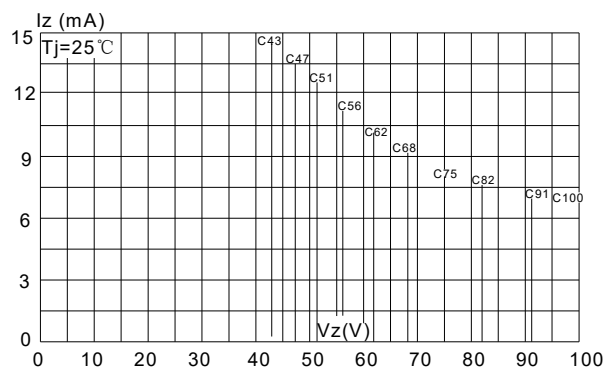


Fig.2 Zener breakdown characteristics

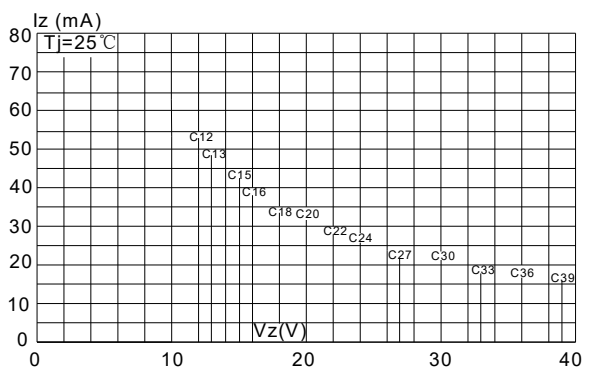
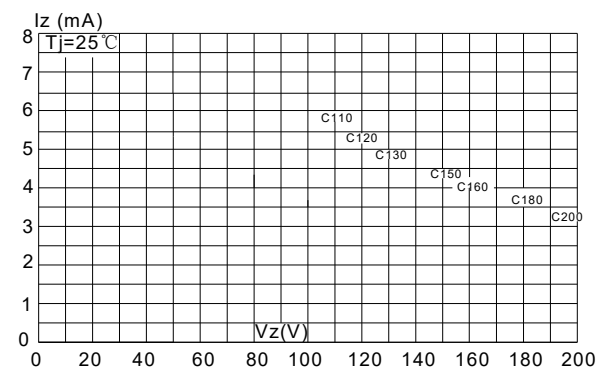


Fig.4 Zener breakdown characteristics



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