

PZUxBA series

Single Zener diodes

Rev. 01 — 19 September 2008 **Product data sheet**

1. Product profile

1.1 General description

General-purpose Zener diodes in a SOD323 (SC-76) very small Surface-Mounted Device (SMD) plastic package.

1.2 Features

- Non-repetitive peak reverse power dissipation: $P_{ZSM} \leq 40$ W
- Total power dissipation: $P_{tot} \leq 320$ mW
- Tolerance series:
  B: approximately ±5 %;
  B1, B2, B3: approximately ±2 %
- Wide working voltage range:
  nominal 2.4 V to 36 V (E24 range)
- Low reverse current I_R range
- Small plastic package suitable for surface-mounted design
- AEC-Q101 qualified

1.3 Applications

- General regulation functions

1.4 Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	I_F = 100 mA	[1]	-	-	1.1	V
P_{ZSM}	non-repetitive peak reverse power dissipation		[2]	-	-	40	W
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[3]	-	-	320	mW

[1] Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

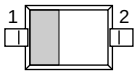
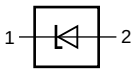
[2] t_p = 100 µs; square wave; T_j = 25 °C prior to surge

[3] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

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2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode [1]		
2	anode		

006aaa152

[1] The marking bar indicates the cathode.

3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PZU2.4BA to PZU36BA[1]	SC-76	plastic surface-mounted package; 2 leads	SOD323
PZU2.4BA/DG to PZU36BA/DG[1][2]			

[1] The series consists of 97 types with nominal working voltages from 2.4 V to 36 V.

[2] /DG: halogen-free

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4. Marking

Table 4. Marking codes

Type number[1]	Marking code				Type number[1]	Marking code			
	B	B1	B2	B3		B	B1	B2	B3
PZU2.4*A	X8	-	-	-	PZU2.4*A/DG	Y8	-	-	-
PZU2.7*A	X9	XA	XB	-	PZU2.7*A/DG	Y9	YA	YB	-
PZU3.0*A	XT	XU	XV	-	PZU3.0*A/DG	YT	YU	YV	-
PZU3.3*A	XW	XX	XY	-	PZU3.3*A/DG	YW	YX	YY	-
PZU3.6*A	XZ	MC	MD	-	PZU3.6*A/DG	YZ	NC	ND	-
PZU3.9*A	ME	MF	MG	-	PZU3.9*A/DG	NE	NF	NG	-
PZU4.3*A	MM	MN	MP	MR	PZU4.3*A/DG	NM	NN	NP	NR
PZU4.7*A	MS	MT	MU	MV	PZU4.7*A/DG	NS	NT	NU	NV
PZU5.1*A	MW	MX	MY	MZ	PZU5.1*A/DG	NW	NX	NY	NZ
PZU5.6*A	LF	LG	LH	LK	PZU5.6*A/DG	RF	RG	RH	RK
PZU6.2*A	LL	LM	LN	LP	PZU6.2*A/DG	RL	RM	RN	RP
PZU6.8*A	LR	LS	LT	LU	PZU6.8*A/DG	RR	RS	RT	RU
PZU7.5*A	LV	LW	LX	LY	PZU7.5*A/DG	RV	RW	RX	RY
PZU8.2*A	LZ	CR	CS	CT	PZU8.2*A/DG	RZ	ER	ES	ET
PZU9.1*A	CU	CV	CW	CX	PZU9.1*A/DG	EU	EV	EW	EX
PZU10*A	VA	VB	VC	VD	PZU10*A/DG	WA	WB	WC	WD
PZU11*A	VE	VF	VG	VH	PZU11*A/DG	WE	WF	WG	WH
PZU12*A	VK	VL	VM	VN	PZU12*A/DG	WK	WL	WM	WN
PZU13*A	VP	VR	VS	VT	PZU13*A/DG	WP	WR	WS	WT
PZU14*A	-	-	VU	-	PZU14*A/DG	-	-	WU	-
PZU15*A	VV	VW	VX	VY	PZU15*A/DG	WV	WW	WX	WY
PZU16*A	VZ	X1	X2	X3	PZU16*A/DG	WZ	Y1	Y2	Y3
PZU18*A	X4	X5	X6	X7	PZU18*A/DG	Y4	Y5	Y6	Y7
PZU20*A	XC	XD	XE	XF	PZU20*A/DG	YC	YD	YE	YF
PZU22*A	XG	XH	XK	XL	PZU22*A/DG	YG	YH	YK	YL
PZU24*A	XM	XN	XP	XR	PZU24*A/DG	YM	YN	YP	YR
PZU27*A	XS	-	-	-	PZU27*A/DG	YS	-	-	-
PZU30*A	MH	-	-	-	PZU30*A/DG	NH	-	-	-
PZU33*A	MK	-	-	-	PZU33*A/DG	NK	-	-	-
PZU36*A	ML	-	-	-	PZU36*A/DG	NL	-	-	-

[1] * = B: tolerance series B, approximately ±5 %
* = B1, B2, B3: tolerance series B1, B2, B3: approximately ±2 %

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5. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	Unit
I_F	forward current			-	200	mA
I_{ZSM}	non-repetitive peak reverse current		[1]	-	see Table 8 and 9	
P_{ZSM}	non-repetitive peak reverse power dissipation		[1]	-	40	W
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[2]	-	320	mW
			[3]	-	490	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			–55	+150	°C
T_{stg}	storage temperature			–65	+150	°C

[1] t_p = 100 µs; square wave; T_j = 25 °C prior to surge

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

[3] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm^2.

6. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	390	K/W
			[2]	-	-	255	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point		[3]	-	-	55	K/W

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm^2.

[3] Soldering point of cathode tab.

7. Characteristics

Table 7. Characteristics

T_j = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage		[1]				
		I_F = 10 mA		-	-	0.9	V
		I_F = 100 mA		-	-	1.1	V

[1] Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

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