

BZB84 series

Dual Zener diodes

Rev. 03 — 9 June 2009 Product data sheet

1. Product profile

1.1 General description

General-purpose Zener diodes in a SOT23 (TO-236AB) small Surface-Mounted Device (SMD) plastic package.

1.2 Features

- Non-repetitive peak reverse power dissipation: ≤ 40 W
- Total power dissipation: ≤ 300 mW
- Two tolerance series: B = ±2 % and C = ±5 %
- Wide working voltage range: nominal 2.4 V to 75 V (E24 range)
- Small plastic package suitable for surface-mounted design
- Dual common anode configuration
- 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
Per diode							
V_F	forward voltage	I_F = 10 mA	[1]	-	-	0.9	V
P_{ZSM}	non-repetitive peak reverse power dissipation		[2]	-	-	40	W

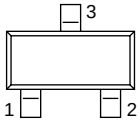
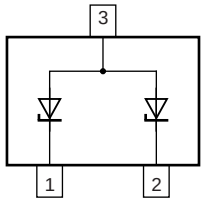
[1] Pulse test: $t_p \leq 300$ µs; $\delta \leq 0.02$.

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

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2. Pinning information

Table 2. Pinning

Pin	Description	Simplified outline	Graphic symbol
1	cathode (diode 1)		
2	cathode (diode 2)		
3	common anode		

006aaa154

3. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BZB84-B2V4 to BZB84-C75[1]	-	plastic surface-mounted package; 3 leads	SOT23

[1] The series consists of 74 types with nominal working voltages from 2.4 V to 75 V.

4. Marking

Table 4. Marking codes

Type number	Marking code[1]	Type number	Marking code[1]
BZB84-B2V4	V9*	BZB84-C2V4	U9*
BZB84-B2V7	VA*	BZB84-C2V7	UA*
BZB84-B3V0	VB*	BZB84-C3V0	UB*
BZB84-B3V3	VC*	BZB84-C3V3	UC*
BZB84-B3V6	VD*	BZB84-C3V6	UD*
BZB84-B3V9	VE*	BZB84-C3V9	UE*
BZB84-B4V3	VF*	BZB84-C4V3	UF*
BZB84-B4V7	VG*	BZB84-C4V7	UG*
BZB84-B5V1	VH*	BZB84-C5V1	UH*
BZB84-B5V6	VK*	BZB84-C5V6	UK*
BZB84-B6V2	VL*	BZB84-C6V2	UL*
BZB84-B6V8	VM*	BZB84-C6V8	UM*
BZB84-B7V5	VN*	BZB84-C7V5	UN*
BZB84-B8V2	VP*	BZB84-C8V2	UP*
BZB84-B9V1	VR*	BZB84-C9V1	UR*

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Table 4. Marking codes *…continued*

Type number	Marking code[1]	Type number	Marking code[1]
BZB84-B10	VS*	BZB84-C10	US*
BZB84-B11	VT*	BZB84-C11	UT*
BZB84-B12	VU*	BZB84-C12	UU*
BZB84-B13	VV*	BZB84-C13	UV*
BZB84-B15	VW*	BZB84-C15	UW*
BZB84-B16	PT*	BZB84-C16	PB*
BZB84-B18	PU*	BZB84-C18	PC*
BZB84-B20	RP*	BZB84-C20	RQ*
BZB84-B22	PV*	BZB84-C22	PD*
BZB84-B24	PW*	BZB84-C24	PE*
BZB84-B27	PX*	BZB84-C27	PF*
BZB84-B30	PY*	BZB84-C30	PG*
BZB84-B33	PZ*	BZB84-C33	PH*
BZB84-B36	RA*	BZB84-C36	PJ*
BZB84-B39	RB*	BZB84-C39	PK*
BZB84-B43	RC*	BZB84-C43	PL*
BZB84-B47	RD*	BZB84-C47	PM*
BZB84-B51	RE*	BZB84-C51	PN*
BZB84-B56	RF*	BZB84-C56	PP*
BZB84-B62	RG*	BZB84-C62	PQ*
BZB84-B68	RH*	BZB84-C68	PR*
BZB84-B75	RJ*	BZB84-C75	PS*

[1] * = -: made in Hong Kong
* = p: made in Hong Kong
* = t: made in Malaysia
* = W: made in China

5. Limiting values

Table 5. Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit
Per diode					
I_F	forward current		-	200	mA
I_{ZSM}	non-repetitive peak reverse current	[1]	-	see Table 8, 9, 10 and 11	
P_{ZSM}	non-repetitive peak reverse power dissipation	[1]	-	40	W

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Table 5. Limiting values *…continued*

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

Symbol	Parameter	Conditions		Min	Max	Unit
Per device						
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[2]	-	300	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 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

6. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per device; single diode loaded							
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air	[1]	-	-	417	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point		[2]	-	-	100	K/W

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

[2] Soldering points at pins 1 and 2.

7. Characteristics

Table 7. Characteristics

T_j = 25 °C unless otherwise specified.

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

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

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