

BZT52H series

Single Zener diodes in a SOD123F package

Rev. 3 — 7 December 2010 Product data sheet

1. Product profile

1.1 General description

General-purpose Zener diodes in a SOD123F small and flat lead Surface-Mounted Device (SMD) plastic package.

1.2 Features and benefits

- Total power dissipation: ≤ 830 mW
- Wide working voltage range: nominal 2.4 V to 75 V (E24 range)
- Small plastic package suitable for surface-mounted design
- Low differential resistance
- 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 = 10 mA	[1]	-	-	0.9	V
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[2]	-	-	375	mW
			[3]	-	-	830	mW

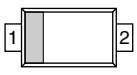
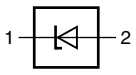
[1] Pulse test: $t_p \leq 300$ μs; $\delta \leq 0.02$.

[2] Device mounted on an FR4 Printed-Circuit Board (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.

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
BZT52H-B2V4 to BZT52H-C75[1]	-	plastic surface-mounted package; 2 leads	SOD123F

[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	Type number	Marking code	Type number	Marking code	Type number	Marking code
BZT52H-B2V4	DC	BZT52H-B15	DX	BZT52H-C2V4	B3	BZT52H-C15	BN
BZT52H-B2V7	DD	BZT52H-B16	DY	BZT52H-C2V7	B4	BZT52H-C16	BP
BZT52H-B3V0	DE	BZT52H-B18	DZ	BZT52H-C3V0	B5	BZT52H-C18	BQ
BZT52H-B3V3	DF	BZT52H-B20	E1	BZT52H-C3V3	B6	BZT52H-C20	BR
BZT52H-B3V6	DG	BZT52H-B22	E2	BZT52H-C3V6	B7	BZT52H-C22	BS
BZT52H-B3V9	DH	BZT52H-B24	E3	BZT52H-C3V9	B8	BZT52H-C24	BT
BZT52H-B4V3	DJ	BZT52H-B27	E4	BZT52H-C4V3	B9	BZT52H-C27	BU
BZT52H-B4V7	DK	BZT52H-B30	E5	BZT52H-C4V7	BA	BZT52H-C30	BV
BZT52H-B5V1	DL	BZT52H-B33	E6	BZT52H-C5V1	BB	BZT52H-C33	BW
BZT52H-B5V6	DM	BZT52H-B36	E7	BZT52H-C5V6	BC	BZT52H-C36	BX
BZT52H-B6V2	DN	BZT52H-B39	E8	BZT52H-C6V2	BD	BZT52H-C39	BY
BZT52H-B6V8	DP	BZT52H-B43	E9	BZT52H-C6V8	BE	BZT52H-C43	BZ
BZT52H-B7V5	DQ	BZT52H-B47	EA	BZT52H-C7V5	BF	BZT52H-C47	C1
BZT52H-B8V2	DR	BZT52H-B51	EB	BZT52H-C8V2	BG	BZT52H-C51	C2
BZT52H-B9V1	DS	BZT52H-B56	EC	BZT52H-C9V1	BH	BZT52H-C56	C3
BZT52H-B10	DT	BZT52H-B62	ED	BZT52H-C10	BJ	BZT52H-C62	C4
BZT52H-B11	DU	BZT52H-B68	EE	BZT52H-C11	BK	BZT52H-C68	C5
BZT52H-B12	DV	BZT52H-B75	EF	BZT52H-C12	BL	BZT52H-C75	C6
BZT52H-B13	DW	-	-	BZT52H-C13	BM	-	-

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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			-	250	mA
I_{ZSM}	non-repetitive peak reverse current			-	see Table 8, 9 and 10	
P_{ZSM}	non-repetitive peak reverse power dissipation		[1]	-	40	W
P_{tot}	total power dissipation	$T_{amb} \leq 25$ °C	[2]	-	375	mW
			[3]	-	830	mW
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			−65	+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]	-	-	330	K/W
			[2]	-	-	150	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point		[3]	-	-	70	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.

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