



# BZX84W-Q series

## Voltage regulator diodes

Rev. 1 — 19 November 2021

Product data sheet

## 1. General description

General-purpose Zener diodes in a SOT323 (SC-70) leadless very small Surface-Mounted Device (SMD) plastic package.

## 2. Features and benefits

- Wide working voltage range: nominal 2.4 V to 75 V (E24 range)
- Two tolerance series:  $\pm 2\%$  and  $\pm 5\%$
- Qualified according to AEC-Q101 and recommended for use in automotive applications

## 3. Applications

- General regulation functions
- High-frequency applications

## 4. Quick reference data

Table 1. Quick reference data

$T_{amb} = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

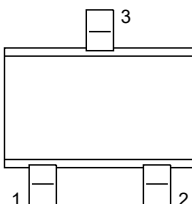
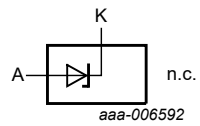
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_F$	forward voltage	$I_F = 10\text{ mA}$	[1]	-	0.9	V
$P_{tot}$	total power dissipation		[2]	-	275	mW

[1] Pulse test:  $t_p \leq 100\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$

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

## 5. Pinning information

Table 2. Pinning

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	A	anode		 aaa-006592
2	n.c.	not connected		
3	K	cathode		

## 6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BZX84W-B2V4-Q to BZX84W-C75-Q [1]	SC-70	Plastic surface-mounted package; 3 leads	SOT323

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

## 7. Marking

Table 4. Marking Codes

Type number	Mark. Code[1]	Type number	Mark. Code[1]	Type number	Mark. Code[1]	Type number	Mark. Code[1]
BZX84W-B2V4-Q	D3%	BZX84W-B15-Q	J5%	BZX84W-C2V4-Q	M3%	BZX84W-C15-Q	R8%
BZX84W-B2V7-Q	D4%	BZX84W-B16-Q	J6%	BZX84W-C2V7-Q	M4%	BZX84W-C16-Q	R9%
BZX84W-B3V0-Q	D5%	BZX84W-B18-Q	J7%	BZX84W-C3V0-Q	M5%	BZX84W-C18-Q	S2%
BZX84W-B3V3-Q	D6%	BZX84W-B20-Q	J8%	BZX84W-C3V3-Q	M6%	BZX84W-C20-Q	S3%
BZX84W-B3V6-Q	D7%	BZX84W-B22-Q	J9%	BZX84W-C3V6-Q	M7%	BZX84W-C22-Q	S4%
BZX84W-B3V9-Q	D8%	BZX84W-B24-Q	K5%	BZX84W-C3V9-Q	M9%	BZX84W-C24-Q	S5%
BZX84W-B4V3-Q	D9%	BZX84W-B27-Q	K6%	BZX84W-C4V3-Q	N3%	BZX84W-C27-Q	S6%
BZX84W-B4V7-Q	E4%	BZX84W-B30-Q	K7%	BZX84W-C4V7-Q	P3%	BZX84W-C30-Q	S7%
BZX84W-B5V1-Q	E5%	BZX84W-B33-Q	K8%	BZX84W-C5V1-Q	P4%	BZX84W-C33-Q	S8%
BZX84W-B5V6-Q	E6%	BZX84W-B36-Q	K9%	BZX84W-C5V6-Q	P5%	BZX84W-C36-Q	S9%
BZX84W-B6V2-Q	E7%	BZX84W-B39-Q	L2%	BZX84W-C6V2-Q	P6%	BZX84W-C39-Q	U2%
BZX84W-B6V8-Q	E8%	BZX84W-B43-Q	L3%	BZX84W-C6V8-Q	P7%	BZX84W-C43-Q	U3%
BZX84W-B7V5-Q	E9%	BZX84W-B47-Q	L5%	BZX84W-C7V5-Q	P8%	BZX84W-C47-Q	U4%
BZX84W-B8V2-Q	F5%	BZX84W-B51-Q	L6%	BZX84W-C8V2-Q	P9%	BZX84W-C51-Q	U5%
BZX84W-B9V1-Q	F7%	BZX84W-B56-Q	L7%	BZX84W-C9V1-Q	R3%	BZX84W-C56-Q	U6%
BZX84W-B10-Q	F9%	BZX84W-B62-Q	L8%	BZX84W-C10-Q	R4%	BZX84W-C62-Q	U7%
BZX84W-B11-Q	J2%	BZX84W-B68-Q	L9%	BZX84W-C11-Q	R5%	BZX84W-C68-Q	U8%
BZX84W-B12-Q	J3%	BZX84W-B75-Q	M2%	BZX84W-C12-Q	R6%	BZX84W-C75-Q	U9%
BZX84W-B13-Q	J4%	-	-	BZX84W-C13-Q	R7%	-	-

[1] % = placeholder for manufacturing site code

## 8. 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
$P_{ZSM}$	non-repetitive peak reverse power dissipation	$t_p = 100 \mu\text{s}$ ; square wave; $T_{amb} = 25 \text{ }^\circ\text{C}$ ; prior to surge	-	40	W
$P_{tot}$	total power dissipation	$T_{amb} = 25 \text{ }^\circ\text{C}$ [1]	-	275	mW
$T_j$	junction temperature		-	150	$^\circ\text{C}$
$T_{amb}$	ambient temperature		-55	+150	$^\circ\text{C}$
$T_{stg}$	storage temperature		-65	+150	$^\circ\text{C}$

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

## 9. 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]	-	-	455	K/W

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

## 10. Characteristics

**Table 7. Characteristics per type; BZX84W-B2V4-Q to BZX84W-C75-Q**

$T_j = 25\text{ °C}$  unless otherwise specified.

Symbol	Parameter	Conditions	Max	Unit
$V_F$	forward voltage	$I_F = 10\text{ mA}$	[1] 0.9	V
$I_R$	reverse current			
	BZX84W-B/C2V4-Q	$V_R = 1\text{ V}$	50	$\mu\text{A}$
	BZX84W-B/C2V7-Q	$V_R = 1\text{ V}$	20	$\mu\text{A}$
	BZX84W-B/C3V0-Q	$V_R = 1\text{ V}$	10	$\mu\text{A}$
	BZX84W-B/C3V3-Q	$V_R = 1\text{ V}$	5	$\mu\text{A}$
	BZX84W-B/C3V6-Q	$V_R = 1\text{ V}$	5	$\mu\text{A}$
	BZX84W-B/C3V9-Q	$V_R = 1\text{ V}$	3	$\mu\text{A}$
	BZX84W-B/C4V3-Q	$V_R = 1\text{ V}$	3	$\mu\text{A}$
	BZX84W-B/C4V7-Q	$V_R = 2\text{ V}$	3	$\mu\text{A}$
	BZX84W-B/C5V1-Q	$V_R = 2\text{ V}$	2	$\mu\text{A}$
	BZX84W-B/C5V6-Q	$V_R = 2\text{ V}$	1	$\mu\text{A}$
	BZX84W-B/C6V2-Q	$V_R = 4\text{ V}$	3	$\mu\text{A}$
	BZX84W-B/C6V8-Q	$V_R = 4\text{ V}$	2	$\mu\text{A}$
	BZX84W-B/C7V5-Q	$V_R = 5\text{ V}$	1	$\mu\text{A}$
	BZX84W-B/C8V2-Q	$V_R = 5\text{ V}$	700	nA
	BZX84W-B/C9V1-Q	$V_R = 6\text{ V}$	500	nA
	BZX84W-B/C10-Q	$V_R = 7\text{ V}$	200	nA
	BZX84W-B/C11-Q	$V_R = 8\text{ V}$	100	nA
	BZX84W-B/C12-Q	$V_R = 8\text{ V}$	100	nA
BZX84W-B/C13-Q	$V_R = 8\text{ V}$	100	nA	
BZX84W-B/C15-Q to 75-Q	$V_R = 0.7 V_{Znom}$	50	nA	

[1] Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .

Table 8. Characteristics per type; BZX84W-B2V4-Q to BZX84W-C24-Q

 $T_j = 25\text{ °C}$  unless otherwise specified.

BZX84W-	Sel	Working voltage $V_Z$ (V)		Differential resistance $r_{dif}$ ( $\Omega$ )		Temperature coefficient $S_Z$ (mV/K)	Diode capacit. $C_d$ (pF) [1]	Non-repetitive peak reverse current $I_{ZSM}$ (A)																																																																																																																																																																																																						
		$I_Z = 5\text{ mA}$ Tol. $\pm 2\%$ (B) Tol. $\pm 5\%$ (C)		$I_Z = 1\text{ mA}$	$I_Z = 5\text{ mA}$	$I_Z = 5\text{ mA}$		$t_p = 100\text{ }\mu\text{s};$ $T_{amb} = 25\text{ °C}$																																																																																																																																																																																																						
		Min	Max	Max	Max	Typ		Max	Max																																																																																																																																																																																																					
2V4-Q	B	2.35	2.45	600	100	-1.6	450	6																																																																																																																																																																																																						
	C	2.20	2.60						2V7-Q	B	2.65	2.75	600	100	-2.0	450	6	C	2.50	2.90	3V0-Q	B	2.94	3.06	600	95	-2.1	450	6	C	2.80	3.20	3V3-Q	B	3.23	3.37	600	95	-2.4	450	6	C	3.10	3.50	3V6-Q	B	3.53	3.67	600	90	-2.4	450	6	C	3.40	3.80	3V9-Q	B	3.82	3.98	600	90	-2.5	450	6	C	3.70	4.10	4V3-Q	B	4.21	4.39	600	90	-2.5	450	6	C	4.00	4.60	4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25
2V7-Q	B	2.65	2.75	600	100	-2.0	450	6																																																																																																																																																																																																						
	C	2.50	2.90						3V0-Q	B	2.94	3.06	600	95	-2.1	450	6	C	2.80	3.20	3V3-Q	B	3.23	3.37	600	95	-2.4	450	6	C	3.10	3.50	3V6-Q	B	3.53	3.67	600	90	-2.4	450	6	C	3.40	3.80	3V9-Q	B	3.82	3.98	600	90	-2.5	450	6	C	3.70	4.10	4V3-Q	B	4.21	4.39	600	90	-2.5	450	6	C	4.00	4.60	4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70						
3V0-Q	B	2.94	3.06	600	95	-2.1	450	6																																																																																																																																																																																																						
	C	2.80	3.20						3V3-Q	B	3.23	3.37	600	95	-2.4	450	6	C	3.10	3.50	3V6-Q	B	3.53	3.67	600	90	-2.4	450	6	C	3.40	3.80	3V9-Q	B	3.82	3.98	600	90	-2.5	450	6	C	3.70	4.10	4V3-Q	B	4.21	4.39	600	90	-2.5	450	6	C	4.00	4.60	4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																		
3V3-Q	B	3.23	3.37	600	95	-2.4	450	6																																																																																																																																																																																																						
	C	3.10	3.50						3V6-Q	B	3.53	3.67	600	90	-2.4	450	6	C	3.40	3.80	3V9-Q	B	3.82	3.98	600	90	-2.5	450	6	C	3.70	4.10	4V3-Q	B	4.21	4.39	600	90	-2.5	450	6	C	4.00	4.60	4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																														
3V6-Q	B	3.53	3.67	600	90	-2.4	450	6																																																																																																																																																																																																						
	C	3.40	3.80						3V9-Q	B	3.82	3.98	600	90	-2.5	450	6	C	3.70	4.10	4V3-Q	B	4.21	4.39	600	90	-2.5	450	6	C	4.00	4.60	4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																										
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	C	3.70	4.10						4V3-Q	B	4.21	4.39	600	90	-2.5	450	6	C	4.00	4.60	4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																																						
4V3-Q	B	4.21	4.39	600	90	-2.5	450	6																																																																																																																																																																																																						
	C	4.00	4.60						4V7-Q	B	4.61	4.79	500	80	-1.4	300	6	C	4.40	5.00	5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																																																		
4V7-Q	B	4.61	4.79	500	80	-1.4	300	6																																																																																																																																																																																																						
	C	4.40	5.00						5V1-Q	B	5.00	5.20	480	60	-0.8	300	6	C	4.80	5.40	5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																																																														
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	C	4.80	5.40						5V6-Q	B	5.49	5.71	400	40	1.2	300	6	C	5.20	6.00	6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																																																																										
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	C	5.20	6.00						6V2-Q	B	6.08	6.32	150	10	2.3	200	6	C	5.80	6.60	6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																																																																																						
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	C	5.80	6.60						6V8-Q	B	6.66	6.94	80	15	3.0	200	6	C	6.40	7.20	7V5-Q	B	7.35	7.65	80	15	4.0	150	4	C	7.00	7.90	8V2-Q	B	8.04	8.36	80	15	4.6	150	4	C	7.70	8.70	9V1-Q	B	8.92	9.28	100	15	5.5	150	3	C	8.50	9.60	10-Q	B	9.80	10.20	150	20	6.4	90	3	C	9.40	10.60	11-Q	B	10.80	11.20	150	20	7.4	85	2.5	C	10.40	11.60	12-Q	B	11.80	12.20	150	25	8.4	85	2.5	C	11.40	12.70																																																																																																																		
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BZX84W-	Sel	Working voltage $V_Z$ (V)		Differential resistance $r_{dif}$ ( $\Omega$ )		Temperature coefficient $S_Z$ (mV/K)	Diode capacit. $C_d$ (pF) [1]	Non-repetitive peak reverse current $I_{ZSM}$ (A)
		$I_Z = 5$ mA Tol. $\pm 2\%$ (B) Tol. $\pm 5\%$ (C)		$I_Z = 1$ mA	$I_Z = 5$ mA	$I_Z = 5$ mA		$t_p = 100$ $\mu$ s; $T_{amb} = 25$ $^{\circ}$ C
		Min	Max	Max	Max	Typ		Max
13-Q	B	12.70	13.30	170	30	9.4	80	2.5
	C	12.40	14.10					
15-Q	B	14.70	15.30	200	30	11.4	75	2.0
	C	13.80	15.60					
16-Q	B	15.70	16.30	200	40	12.4	75	1.5
	C	15.30	17.10					
18-Q	B	17.60	18.40	225	45	14.4	70	1.5
	C	16.80	19.10					
20-Q	B	19.60	20.40	225	55	16.4	60	1.5
	C	18.80	21.20					
22-Q	B	21.60	22.40	250	55	18.4	60	1.25
	C	20.80	23.30					
24-Q	B	23.50	24.50	250	70	20.4	55	1.25
	C	22.80	25.60					

[1]  $f = 1$  MHz;  $V_R = 0$  V

Table 9. Characteristics per type; BZX84W-B27-Q to BZX84W-C75-Q

 $T_j = 25\text{ °C}$  unless otherwise specified.

BZX84W-	Sel	Working voltage $V_Z$ (V)		Differential resistance $r_{dif}$ ( $\Omega$ )		Temperature coefficient $S_Z$ (mV/K)	Diode capacitance $C_d$ (pF) [1]	Non-repetitive peak reverse current
		$I_Z = 2\text{ mA}$ Tol. $\pm 2\%$ (B) Tol. $\pm 5\%$ (C)		$I_Z = 0.5\text{ mA}$	$I_Z = 2\text{ mA}$	$I_Z = 2\text{ mA}$		
		Min	Max	Max	Max	Typ		Max
27-Q	B	26.50	27.50	300	80	23.4	50	1.0
	C	25.10	28.90					
30-Q	B	29.40	30.60	300	80	26.6	50	1.0
	C	28.50	32.00					
33-Q	B	32.30	33.70	325	80	29.7	45	0.9
	C	31.00	35.00					
36-Q	B	35.30	36.70	350	90	33.0	45	0.8
	C	34.00	38.00					
39-Q	B	38.20	39.80	350	130	36.4	45	0.7
	C	37.00	41.00					
43-Q	B	42.10	43.90	375	150	41.2	40	0.6
	C	40.00	46.00					
47-Q	B	46.10	47.90	375	170	46.1	40	0.5
	C	44.00	50.00					
51-Q	B	50.00	52.00	400	180	51.0	40	0.4
	C	48.00	54.00					
56-Q	B	54.90	57.10	425	200	57.0	40	0.3
	C	52.00	60.00					
62-Q	B	60.80	63.20	450	215	64.4	35	0.3
	C	58.00	66.00					
68-Q	B	66.60	69.40	475	240	71.7	35	0.25
	C	64.00	72.00					
75-Q	B	73.50	76.50	500	255	80.2	35	0.2
	C	70.00	79.00					

[1]  $f = 1\text{ MHz}$ ;  $V_R = 0\text{ V}$

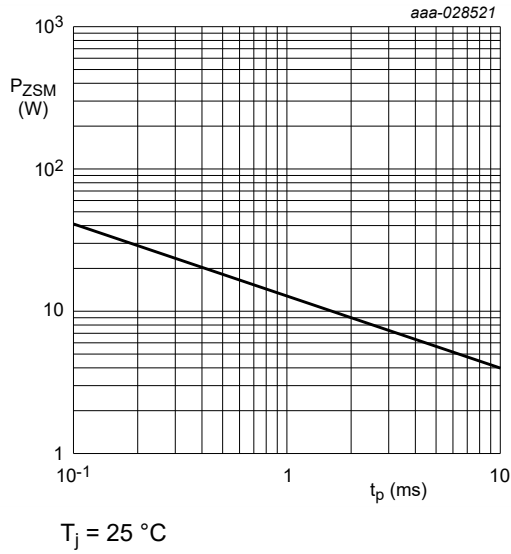


Fig. 1. Non-repetitive peak reverse power dissipation as a function of pulse duration, maximum values

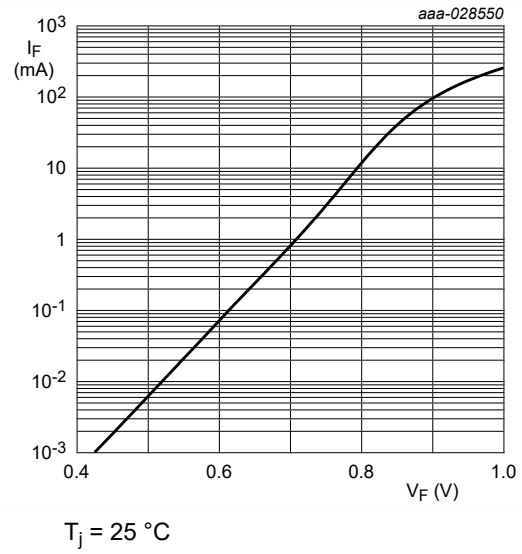


Fig. 2. Forward current as a function of forward voltage; typical values (BZX84W-B/C2V4-Q)

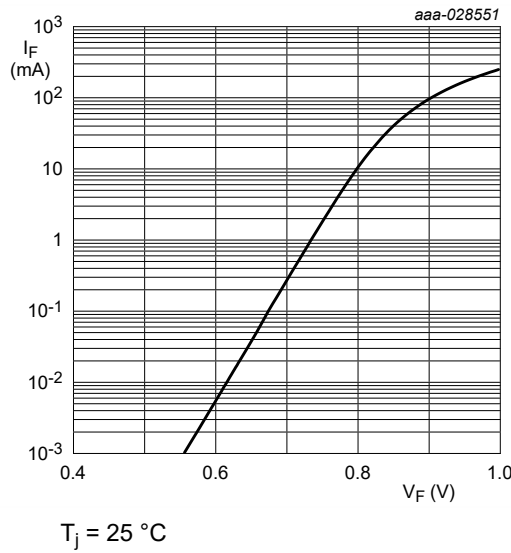


Fig. 3. Forward current as a function of forward voltage; typical values (BZX84W-B/C6V8-Q)

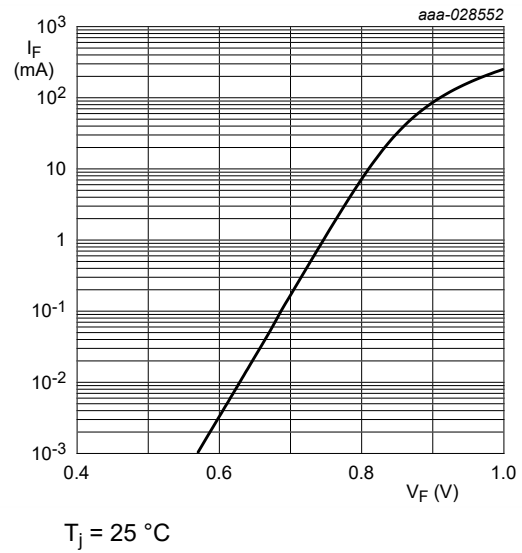
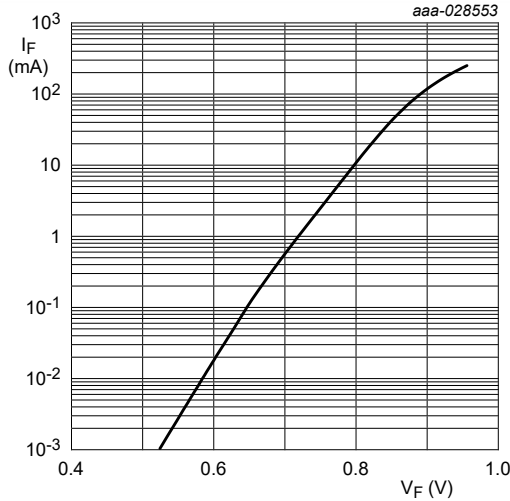


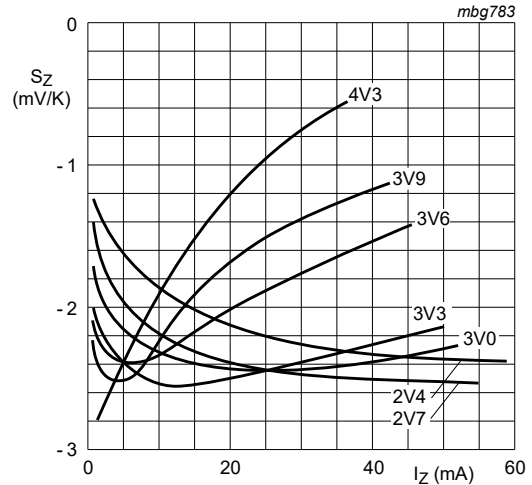
Fig. 4. Forward current as a function of forward voltage; typical values (BZX84W-B/C7V5-Q)





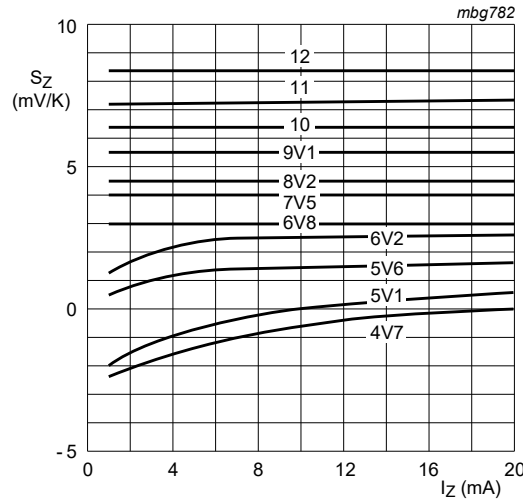
$T_j = 25\text{ }^\circ\text{C}$

**Fig. 5. Forward current as a function of forward voltage; typical values (BZX84W-B/C75-Q)**



$T_j = 25\text{ }^\circ\text{C}$  to  $150\text{ }^\circ\text{C}$

**Fig. 6. Temperature coefficient as a function of working current; typical values (BZX84W-B/C2V4-Q to B/C4V3-Q)**



$T_j = 25\text{ }^\circ\text{C}$  to  $150\text{ }^\circ\text{C}$

**Fig. 7. Temperature coefficient as a function of working current; typical values (BZX84W-B/C4V7-Q to B/C12-Q)**

## 11. Test information

### Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - Stress test qualification for discrete semiconductors, and is suitable for use in automotive applications.

12. Package outline

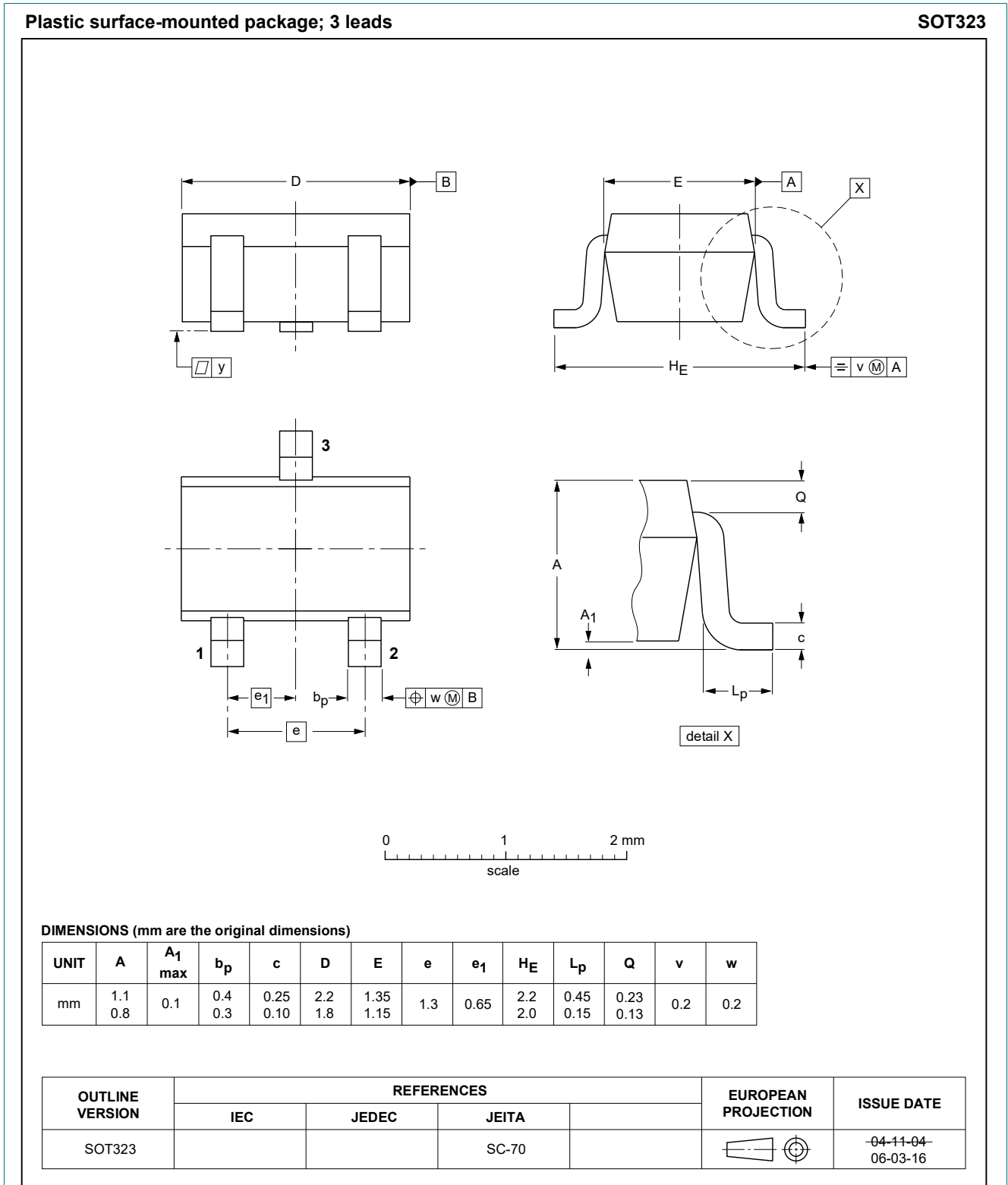


Fig. 8. Package outline SOT323

### 13. Soldering

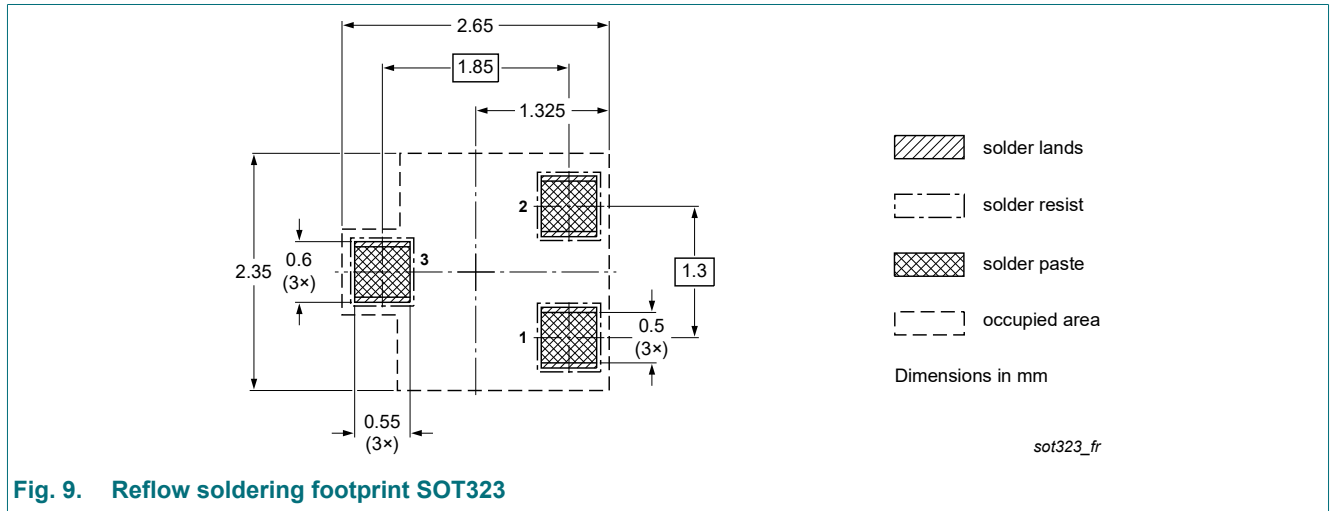


Fig. 9. Reflow soldering footprint SOT323

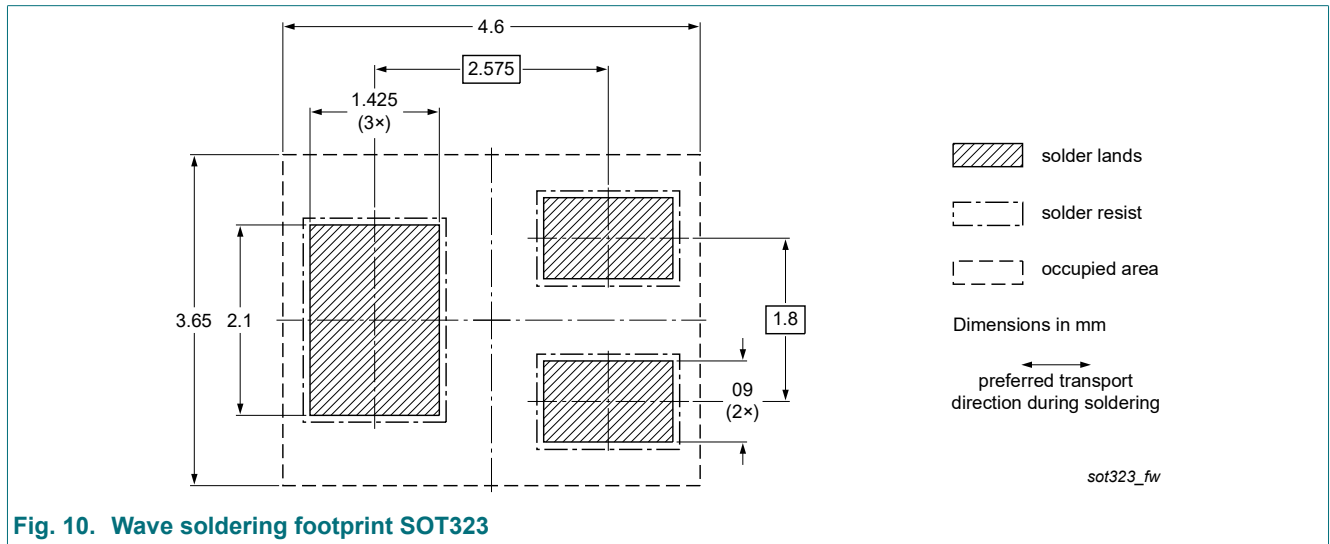


Fig. 10. Wave soldering footprint SOT323

## 14. Revision history

Table 10. Revision history

Document ID	Release date	Data sheet status	Change notice	Supersedes
BZX84W-Q_SER v.1	20211119	Product data sheet	-	-

## 15. Legal information

### Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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Date of release: 19 November 2021

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