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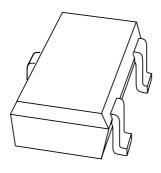
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Kind regards,

Team Nexperia

DISCRETE SEMICONDUCTORS

DATA SHEET



BZB784 seriesVoltage regulator double diodes

Product data sheet Supersedes data of 2000 May 24 2001 Feb 27



Voltage regulator double diodes

BZB784 series

FEATURES

• Total power dissipation: max. 350 mW

• Approx. 5% V_Z tolerance

• Working voltage range: nom. 2.4 to 15 V (E24 range).

APPLICATIONS

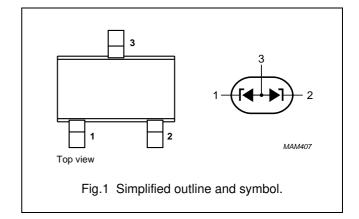
- · General regulation functions
- ESD and surge protection.

DESCRIPTION

Low-power voltage regulator diodes in a small SOT323 (SC-70) package.

PINNING SOT323 (SC-70)

PIN	DESCRIPTION
1	cathode
2	cathode
3	common anode



MARKING

TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE	TYPE NUMBER	MARKING CODE
BZB784-C2V4	91	BZB784-C3V9	96	BZB784-C6V2	9B	BZB784-C10	9G
BZB784-C2V7	92	BZB784-C4V3	97	BZB784-C6V8	9C	BZB784-C11	9H
BZB784-C3V0	93	BZB784-C4V7	98	BZB784-C7V5	9D	BZB784-C12	9J
BZB784-C3V3	94	BZB784-C5V1	99	BZB784-C8V2	9E	BZB784-C13	9K
BZB784-C3V6	95	BZB784-C5V6	9A	BZB784-C9V1	9F	BZB784-C15	9L

LIMITING VALUES

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

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I _F	continuous forward current		-	200	mA
I _{ZSM}	non-repetitive peak reverse current	t _p = 100 μs; square wave; T _{amb} = 25 °C; prior to surge	see Table	1	
P _{tot}	total power dissipation; note 1	T _{amb} = 25 °C; 2 diodes loaded	_	350	mW
		T _{amb} = 25 °C; 1 diode loaded	_	180	mW
P _{ZSM}	non-repetitive peak reverse dissipation	t _p = 100 μs; square wave; T _{amb} = 25 °C; prior to surge	_	40	W
T _{stg}	storage temperature		-65	+150	°C
Tj	junction temperature		_	150	°C

Note

1. Device mounted on an FR4 printed-circuit board.

Voltage regulator double diodes

BZB784 series

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
R _{th j-s}	thermal resistance from junction to soldering point	2 diodes loaded; note 1	140	K/W
		1 diode loaded; note 1	265	K/W
R _{th j-a}	thermal resistance from junction to ambient	2 diodes loaded; note 2	355	K/W
		1 diode loaded; note 2	680	K/W

Notes

- 1. Solder points on cathode tabs.
- 2. Device mounted on a FR4 printed-circuit board.

ELECTRICAL CHARACTERISTICS

Total BZB784-C series

 T_j = 25 °C; unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MAX.	UNIT
V _F	forward voltage	I _F = 10 mA; see Fig.2	0.9	V
l _R	reverse current			
	BZB784-C2V4	V _R = 1 V	50	μΑ
	BZB784-C2V7	$V_R = 1 V$	20	μΑ
	BZB784-C3V0	$V_R = 1 V$	10	μΑ
	BZB784-C3V3	V _R = 1 V	5	μΑ
	BZB784-C3V6	$V_R = 1 V$	5	μΑ
	BZB784-C3V9	$V_R = 1 V$	3	μΑ
	BZB784-C4V3	V _R = 1 V	3	μΑ
	BZB784-C4V7	V _R = 2 V	3	μΑ
	BZB784-C5V1	V _R = 2 V	2	μΑ
	BZB784-C5V6	V _R = 2 V	1	μΑ
	BZB784-C6V2	V _R = 4 V	3	μΑ
	BZB784-C6V8	$V_R = 4 V$	2	μΑ
	BZB784-C7V5	V _R = 5 V	1	μΑ
	BZB784-C8V2	$V_R = 5 V$	700	nA
	BZB784-C9V1	V _R = 6 V	500	nA
	BZB784-C10	V _R = 7 V	200	nA
	BZB784-C11	V _R = 8 V	100	nA
	BZB784-C12	V _R = 8 V	100	nA
	BZB784-C13	V _R = 8 V	100	nA
	BZB784-C15	V _R = 10.5V	50	nA

Voltage regulator double diodes

Product data sheet

Table 1 Per type BZB784-C2V4 to C15

T_i = 25 °C; unless otherwise specified.

BZB784-C XXX	VOL ⁻ V _Z	WORKING VOLTAGE $V_Z(V)$ at $I_Z = 5$ mA		DIFFERENTIAL RESISTANCE $r_{ m dif}\left(\Omega\right)$				DIODE CAP. C_d (pF) at f = 1 MHz; $V_B = 0 V$	NON-REPETITIVE PEAK REVERSE CURRENT I _{ZSM} (A) at t _p = 100 μs;	
	Tol.	≈5%	at I _Z = 1 mA		at I _Z = 5 mA		(see Figs 3 and 4)	V _R = U V	T _{amb} = 25 °C	
	MIN.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	MAX.	
2V4	2.2	2.6	275	600	70	100	-1.3	450	6.0	
2V7	2.5	2.9	300	600	75	100	-1.4	450	6.0	
3V0	2.8	3.2	325	600	80	95	-1.6	450	6.0	
3V3	3.1	3.5	350	600	85	95	-1.8	450	6.0	
3V6	3.4	3.8	375	600	85	90	-1.9	450	6.0	
3V9	3.7	4.1	400	600	85	90	-1.9	450	6.0	
4V3	4.0	4.6	410	600	80	90	-1.7	450	6.0	
4V7	4.4	5.0	425	500	50	80	-1.2	300	6.0	
5V1	4.8	5.4	400	480	40	60	-0.5	300	6.0	
5V6	5.2	6.0	80	400	15	40	1.0	300	6.0	
6V2	5.8	6.6	40	150	6	10	2.2	200	6.0	
6V8	6.4	7.2	30	80	6	15	3.0	200	6.0	
7V5	7.0	7.9	30	80	6	15	3.6	150	4.0	
8V2	7.7	8.7	40	80	6	15	4.3	150	4.0	
9V1	8.5	9.6	40	100	6	15	5.2	150	3.0	
10	9.4	10.6	50	150	8	20	6.0	90	3.0	
11	10.4	11.6	50	150	10	20	6.9	90	2.5	
12	11.4	12.7	50	150	10	25	7.9	85	2.5	
13	12.4	14.1	50	170	10	30	8.8	80	2.5	
15	13.8	15.6	50	200	10	30	10.7	75	2.0	

Voltage regulator double diodes

BZB784 series

GRAPHICAL DATA

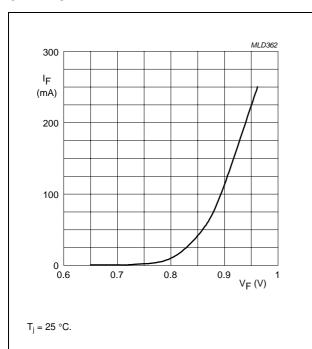
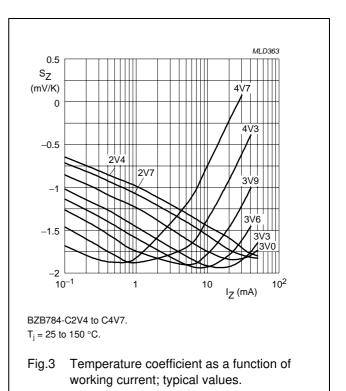
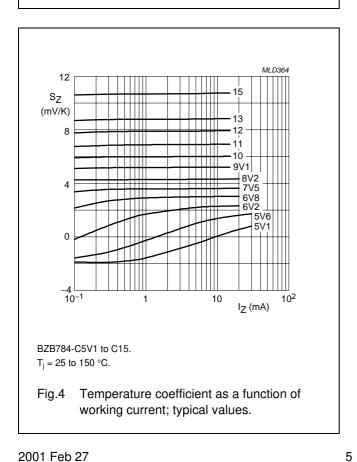


Fig.2 Forward current as a function of forward voltage; typical values.





2001 Feb 27

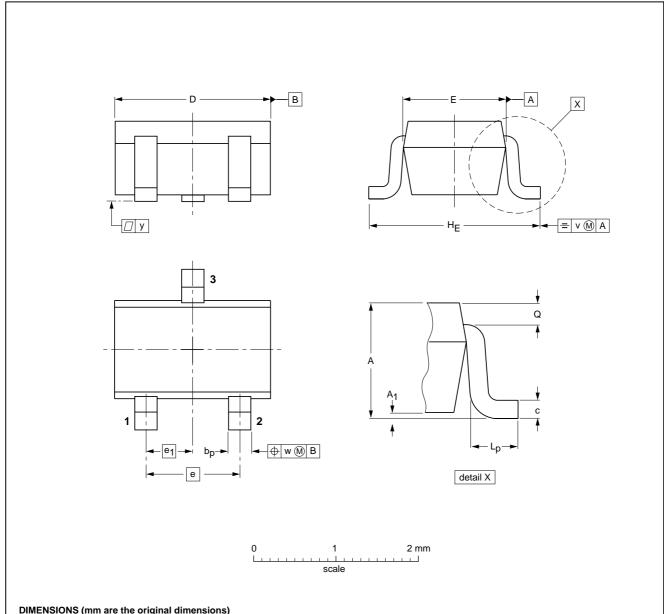
Voltage regulator double diodes

BZB784 series

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT323



DIMENS	10N2 (II	ım are tı	ne origir	iai dime	nsions)	

UNIT	Α	A ₁ max	bp	С	D	E	е	e ₁	HE	Lp	Q	v	w
mm	1.1 0.8	0.1	0.4 0.3	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.23 0.13	0.2	0.2

OUTLINE		REFER	EUROPEAN	ISSUE DATE		
VERSION	IEC	JEDEC	EIAJ		PROJECTION	1330E DATE
SOT323			SC-70		$ \ \ \bigoplus \big($	97-02-28

Voltage regulator double diodes

BZB784 series

DATA SHEET STATUS

DOCUMENT STATUS(1)	PRODUCT STATUS ⁽²⁾	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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NXP Semiconductors

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Printed in The Netherlands 613514/02/pp8 Date of release: 2001 Feb 27 Document order number: 9397 750 08112

