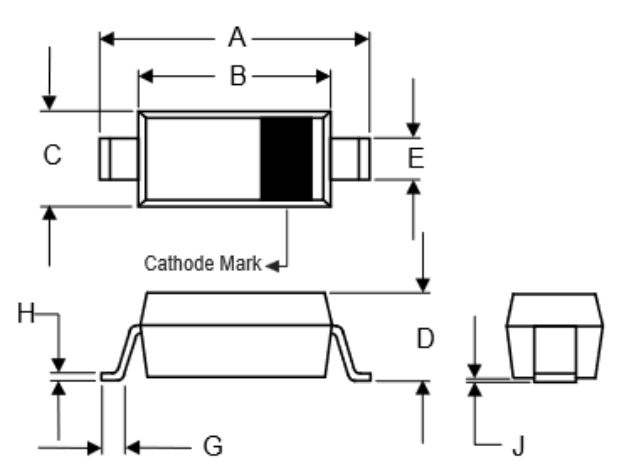


Silicon SMD Voltage Regulator Zener Diodes

Primary characteristics		
Parameter	Value	Unit
V _Z range nom.	2.4 to 43	V
Power rating	200	mW

Features

- SOD-323 case for easy automatic insertion.
- Pb-free and RoHS compliant
- General purpose, medium current

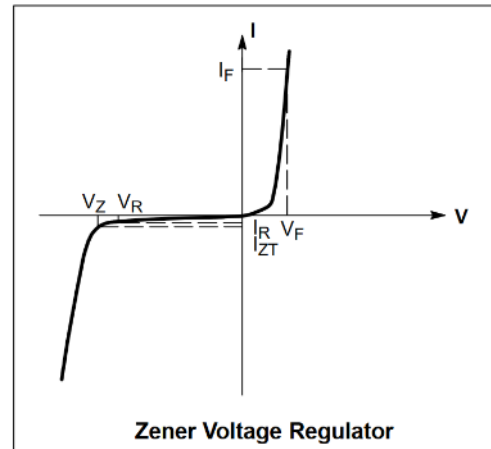
Case dimensions								
								
SOD-323								
Unit	A	B	C	D	E	G	H	J
mm	2.5 ±0.2	1.7 ±0.1	1.25 ±0.10	1.00 -0.2 +0.15	0.3 -0.05 +0.1	0.25 -0.15 +0.2	0.2 -0.1 +0.05	<0.15

Part numbering system		
BZT52C	8V2	S
↓ Series code	↓ Reverse Zener Voltage (see: Characteristics table)	

Absolute maximum ratings (T _a = 25°C)			
Parameter	Symbol	Value	Unit
Forward Voltage @ I _F =10mA ²⁾	V _F	0.9	V
Power Dissipation ¹⁾	P _D	200	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	-55 ~ 150	°C
Thermal Resistance Junction to Ambient Air	R _{thA}	625	°C/W

¹⁾ Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²
²⁾ Short duration test pulse used to minimize self-heating effect

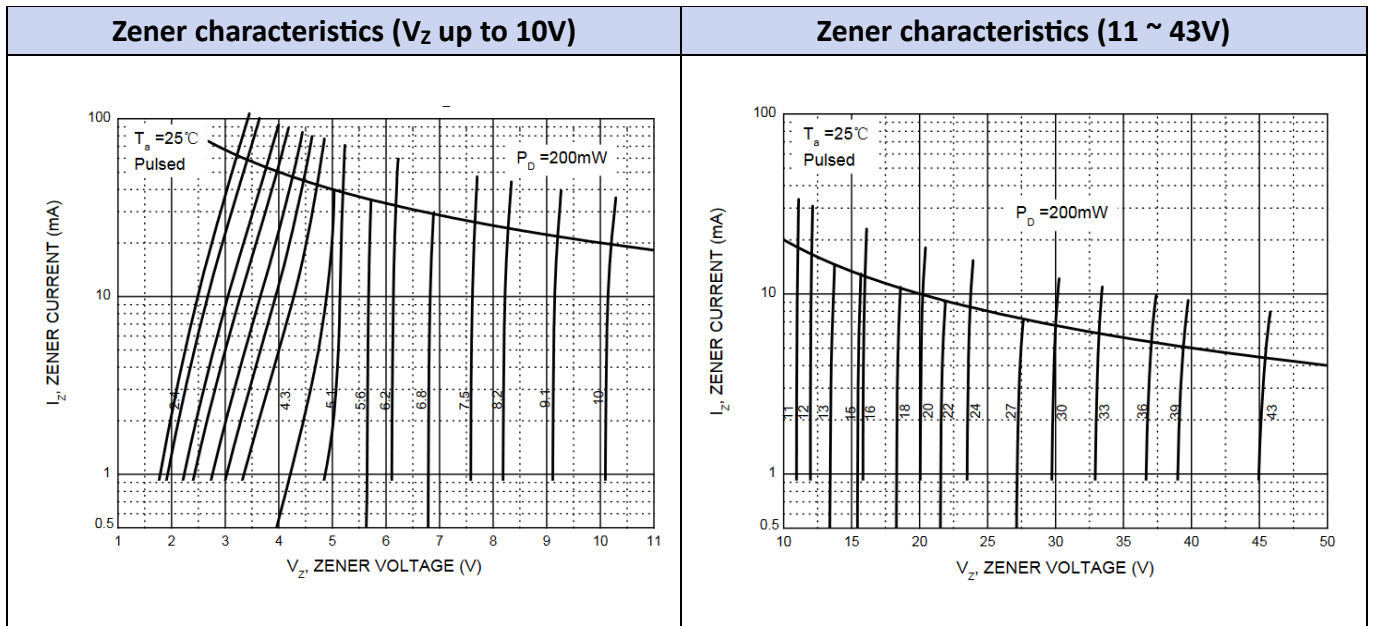
Parameters list	
Symbol	Parameter
V_Z	Reverse Zener Voltage @ I_{ZT}
I_{ZT}	Reverse Current
I_R	Reverse Leakage Current @ V_R
V_R	Reverse Voltage
I_F	Forward Current
V_F	Forward Voltage @ I_F



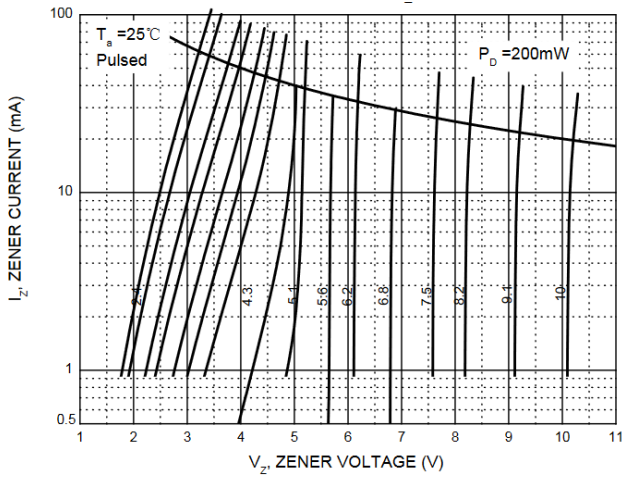
Characteristics table ($T_a = 25^\circ\text{C}$)												
Type	Marking Code	Zener Voltage ²⁾			Dynamic Resistance ³⁾				Reverse Current ²⁾		Typical temperature coefficient @ I_{ZTC}	Test current
		V_Z nom. V	I_{ZT} mA	V_{ZT} V	$r_{ZJT} @ I_{ZT}$		$r_{ZJK} @ I_{ZK}$		$I_R @ V_R$			
					Ω	mA	Ω	mA	μA	V	mV/ $^\circ\text{C}$	mA
BZT52C2V4S	WX	2.4	5.0	2.2 ~ 2.6	<100	5.0	<600	1.0	<50	1.0	-3.5 ~ 0	5
BZT52C2V7S	W1	2.7	5.0	2.5 ~ 2.9	<100	5.0	<600	1.0	<20	1.0	-3.5 ~ 0	5
BZT52C3V0S	W2	3.0	5.0	2.8 ~ 3.2	<95	5.0	<600	1.0	<10	1.0	-3.5 ~ 0	5
BZT52C3V3S	W3	3.3	5.0	3.1 ~ 3.5	<95	5.0	<600	1.0	<5	1.0	-3.5 ~ 0	5
BZT52C3V6S	W4	3.6	5.0	3.4 ~ 3.8	<90	5.0	<600	1.0	<5	1.0	-3.5 ~ 0	5
BZT52C3V9S	W5	3.9	5.0	3.7 ~ 4.1	<90	5.0	<600	1.0	<3	1.0	-3.5 ~ 0	5
BZT52C4V3S	W6	4.3	5.0	4.0 ~ 4.6	<90	5.0	<600	1.0	<3	1.0	-3.5 ~ 0	5
BZT52C4V7S	W7	4.7	5.0	4.4 ~ 5.0	<80	5.0	<500	1.0	<3	2.0	-3.5 ~ 0.2	5
BZT52C5V1S	W8	5.1	5.0	4.8 ~ 5.4	<60	5.0	<480	1.0	<2	2.0	-2.7 ~ 1.2	5
BZT52C5V6S	W9	5.6	5.0	5.2 ~ 6.0	<40	5.0	<400	1.0	<1	2.0	-2 ~ 2.5	5
BZT52C6V2S	WA	6.2	5.0	5.8 ~ 6.6	<10	5.0	<150	1.0	<3	4.0	0.4 ~ 3.7	5
BZT52C6V8S	WB	6.8	5.0	6.4 ~ 7.2	<15	5.0	<80	1.0	<2	4.0	1.2 ~ 4.5	5
BZT52C7V5S	WC	7.5	5.0	7.0 ~ 7.9	<15	5.0	<80	1.0	<1	5.0	2.5 ~ 5.3	5
BZT52C8V2S	WD	8.2	5.0	7.7 ~ 8.7	<15	5.0	<80	1.0	<0.7	5.0	3.2 ~ 6.2	5
BZT52C9V1S	WE	9.1	5.0	8.5 ~ 9.6	<15	5.0	<100	1.0	<0.5	6.0	3.8 ~ 7.0	5
BZT52C10S	WF	10	5.0	9.4 ~ 10.6	<20	5.0	<150	1.0	<0.2	7.0	4.5 ~ 8.0	5
BZT52C11S	WG	11	5.0	10.4 ~ 11.6	<20	5.0	<150	1.0	<0.1	8.0	5.4 ~ 9.0	5
BZT52C12S	WH	12	5.0	11.4 ~ 12.7	<25	5.0	<150	1.0	<0.1	8.0	6.0 ~ 10.0	5
BZT52C13S	WI	13	5.0	12.4 ~ 14.1	<30	5.0	<170	1.0	<0.1	8.0	7.0 ~ 11.0	5
BZT52C15S	WJ	15	5.0	13.8 ~ 15.6	<30	5.0	<200	1.0	<0.1	10.5	9.2 ~ 13	5
BZT52C16S	WK	16	5.0	15.3 ~ 17.1	<40	5.0	<200	1.0	<0.1	11.2	10.4 ~ 14	5
BZT52C18S	WL	18	5.0	16.8 ~ 19.1	<45	5.0	<225	1.0	<0.1	12.6	12.4 ~ 16	5
BZT52C20S	WM	20	5.0	18.8 ~ 21.2	<55	5.0	<225	1.0	<0.1	14.0	14.4 ~ 18.0	5
BZT52C22S	WN	22	5.0	20.8 ~ 23.3	<55	5.0	<250	1.0	<0.1	15.4	16.4 ~ 20.0	5
BZT52C24S	WO	24	5.0	22.8 ~ 25.6	<70	5.0	<250	1.0	<0.1	16.8	18.4 ~ 22.0	5

Characteristics table ($T_a = 25^\circ\text{C}$)												
Type	Marking Code	Zener Voltage ²⁾			Dynamic Resistance ³⁾				Reverse Current ²⁾		Typical temperature coefficient @ I_{ztc} mV/°C	Test current I_{ztc} mA
		V_Z nom. V	I_{zT} mA	V_{zT} V	$r_{zIT} @ I_{zT}$ Ω mA		$r_{zIK} @ I_{zK}$ Ω mA		$I_R @ V_R$ μA V			
BZT52C27S	WP	27	2.0	25.1 ~ 28.9	<80	2.0	<300	0.5	<0.1	18.9	21.4 ~ 25.3	2
BZT52C30S	WQ	30	2.0	28.0 ~ 32.0	<80	2.0	<300	0.5	<0.1	21.0	24.4 ~ 29.4	2
BZT52C33S	WR	33	2.0	31.0 ~ 35.0	<80	2.0	<325	0.5	<0.1	23.1	27.4 ~ 33.4	2
BZT52C36S	WS	36	2.0	34.0 ~ 38.0	<90	2.0	<350	0.5	<0.1	25.2	30.4 ~ 37.4	2
BZT52C39S	WT	39	2.0	37.0 ~ 41.0	<130	2.0	<350	0.5	<0.1	27.3	33.4 ~ 41.2	2
BZT52C43S	WU	43	2.0	40.0 ~ 46.0	<100	2.0	<700	1.0	<0.1	32	10 ~ 12	5

¹⁾ Device mounted on ceramic PCB: 7.6mm x 9.4mm x 0.87mm with pad areas 25mm²
²⁾ Short duration test pulse used to minimize self-heating effect
³⁾ f = 1kHz

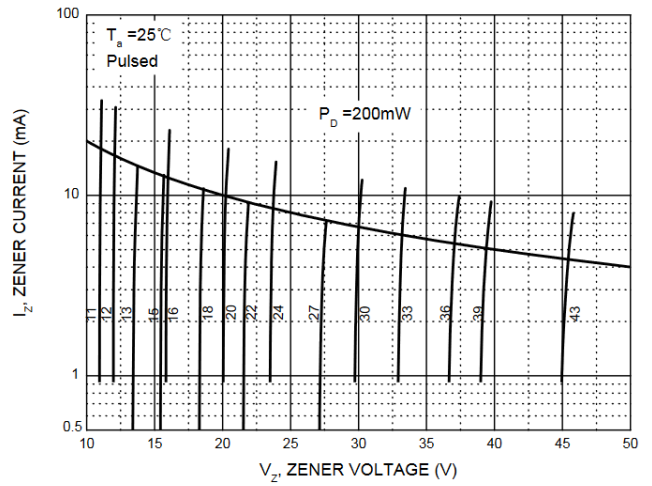


Zener characteristics (V_Z up to 10V)

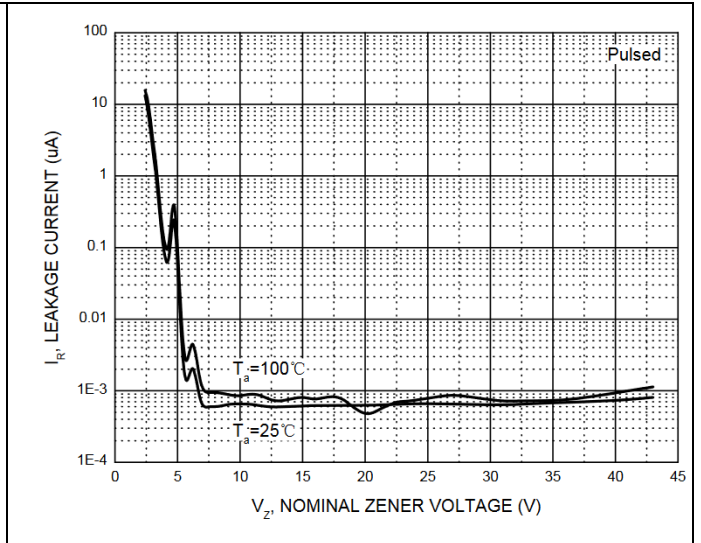
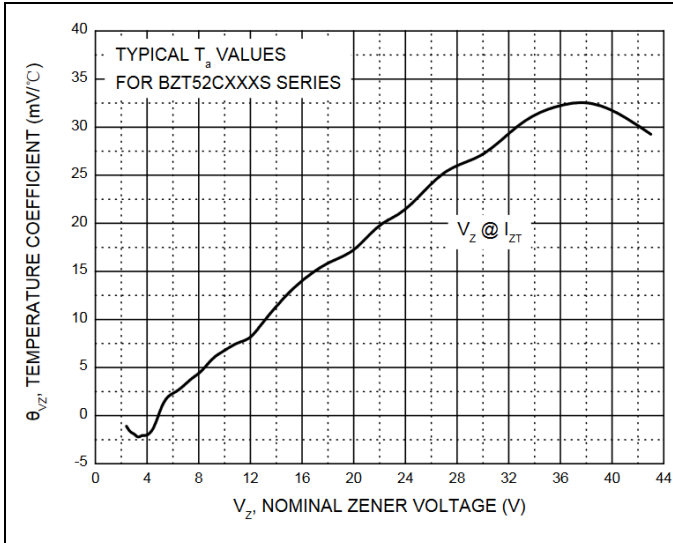


Temperature coefficients

Zener characteristics (11 ~ 43V)

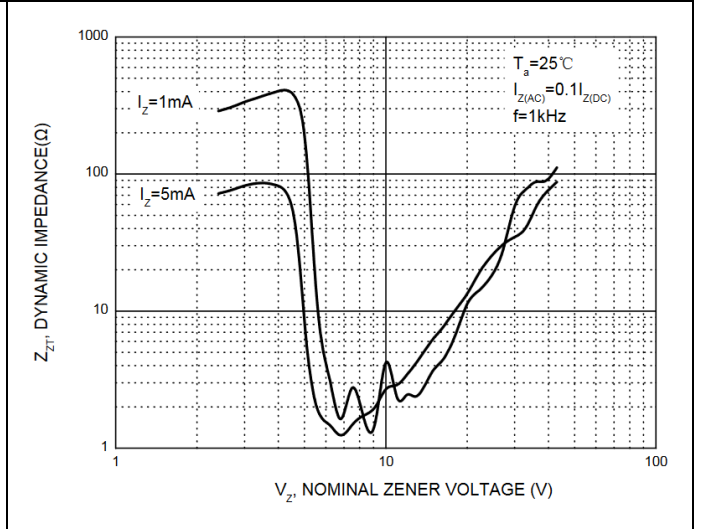
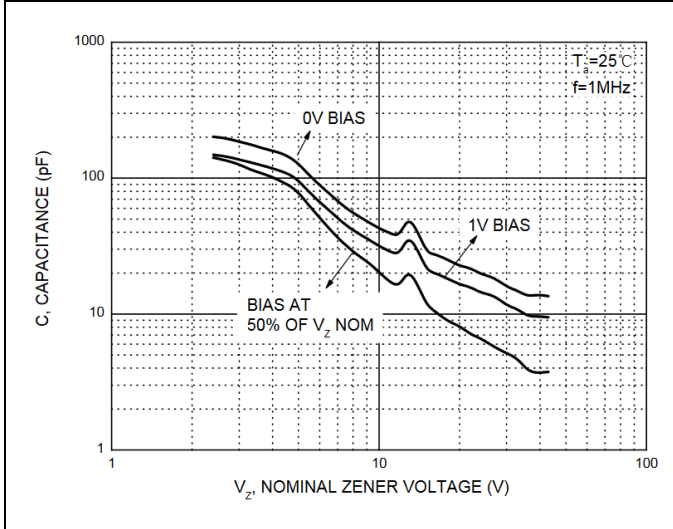


Typical Leakage Current

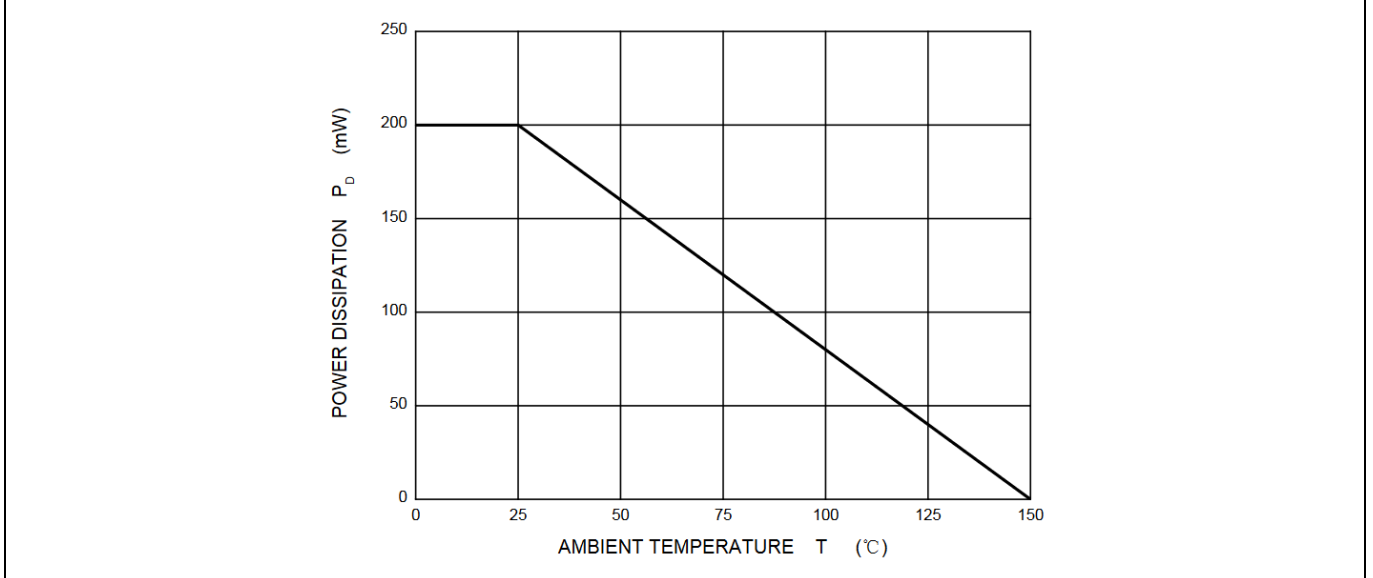


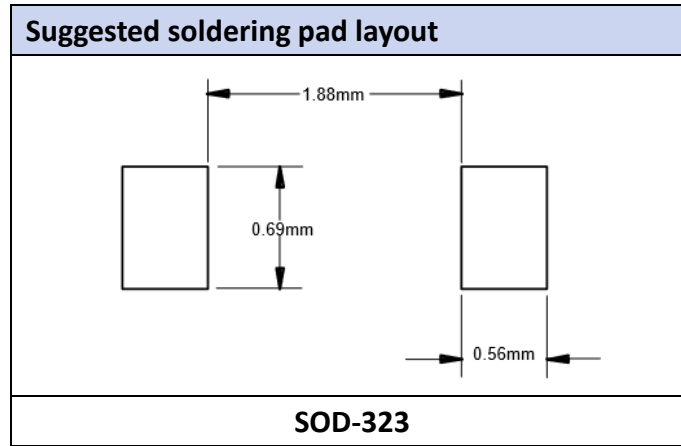
Typical capacitance

Effect of Zener voltage on Zener impedance



Power derating curve





Ordering information			
Part Number	Package	Shipping Quantity	Dimensions
BZT52C2V4S ~ BZT52C43S	SOD-323	3000 pcs / reel	---

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