VOLTAGE REGULATOR DIODES

Silicon planar diodes in a DO-35 envelope intended for use as low-voltage stabilizers or voltage references. The series covers the normalized range of nominal working voltages from 2,4 V to 75 V with a tolerance of ± 5% (international standard E24).

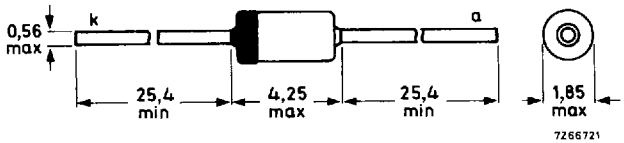
QUICK REFERENCE DATA

Working voltage range	V_Z	nom.	2,4 to 75	V
Total power dissipation*	P_{tot}	max.	500	mW
Non-repetitive peak reverse power dissipation	P_{ZSM}	max.	30	W
Junction temperature	T_j	max.	200	°C
Thermal resistance from junction to tie-point*	$R_{th\ j\text{-}tp}$	=	0,30	K/mW

* If leads are kept at T_{tp} = 50 °C at 8 mm from body.

MECHANICAL DATA

Fig. 1 DO-35 (SOD-27). Dimensions in mm



Cathode indicated by coloured band
The diodes are type-branded.

Products, approved to CECC 50 005-005.

RATINGS

Limiting values in accordance with the Absolute Maximum System (IEC 134)

Average forward current (averaged over any 20 ms period)	$I_{F(AV)}$	max.	250	mA
Repetitive peak forward current	I_{FRM}	max.	250	mA
Total power dissipation	P_{tot}	max.	400	mW*
		max.	500	mW**
Non-repetitive peak reverse power dissipation t = 100 μs; T_j = 150 °C	P_{ZSM}	max.	30	W
Storage temperature	T_{stg}		−65 to + 200	°C
Junction temperature	T_j	max.	200	°C

THERMAL RESISTANCE

From junction to tie-point	$R_{th\ j\text{-}tp}$	=	0,30	K/mW**
From junction to ambient	$R_{th\ j\text{-}a}$	=	0,38	K/mW*

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

Forward voltage I_F = 100 mA		V_F	<		1,0	V
Reverse current				at T_j = 25	150	°C
BZX55-C2V4	V_R = 1 V	I_R	<	50	100	μA
C2V7		I_R	<	10	50	μA
C3V0		I_R	<	4	40	μA
C3V3		I_R	<	2	40	μA
C3V6		I_R	<	2	40	μA
C3V9		I_R	<	2	40	μA
C4V3		I_R	<	1	20	μA
C4V7		I_R	<	0,5	10	μA
C5V1		I_R	<	0,1	2	μA
C5V6		I_R	<	0,1	2	μA
C6V2	V_R = 2 V	I_R	<	0,1	2	μA
C6V8	V_R = 3 V	I_R	<	0,1	2	μA
C7V5	V_R = 5 V	I_R	<	0,1	2	μA
C8V2 to C75	V_R = 0,75 V_{Znom}	I_R	<	0,1	2	μA

* In still air at maximum lead length up to T_{amb} = 25 °C.

** If leads are kept at T_{amb} = 50 °C at 8 mm from body.

BZX55-...	working voltage		differential resistance		temperature coefficient
	V_Z (V)		r_{diff} (Ω)		S_Z (mV/K)
	at I_Z = 5 mA		at I_Z = 5 mA	at I_Z = 1 mA	at I_Z = 5 mA
	min.	max.	max.	max.	typ.
C2V4	2,28	2,56	85	600	−1,8
C2V7	2,5	2,9	85	600	−1,9
C3V0	2,8	3,2	85	600	−2,1
C3V3	3,1	3,5	85	600	−2,2
C3V6	3,4	3,8	85	600	−2,4
C3V9	3,7	4,1	85	600	−2,4
C4V3	4,0	4,6	75	600	−2,4
C4V7	4,4	5,0	60	600	−1,4
C5V1	4,8	5,4	35	550	−0,8
C5V6	5,2	6,0	25	450	1,6
C6V2	5,8	6,6	10	200	2,2
C6V8	6,4	7,2	8	150	3,0
C7V5	7,0	7,9	7	50	3,8
C8V2	7,7	8,7	7	50	4,5
C9V1	8,5	9,6	10	50	5,5
C10	9,4	10,6	15	70	6,5
C11	10,4	11,6	20	70	7,7
C12	11,4	12,7	20	90	8,4
C13	12,4	14,1	26	110	9,8
C15	13,8	15,6	30	110	11,3
C16	15,3	17,1	40	170	12,8
C18	16,8	19,1	50	170	14,4
C20	18,8	21,2	55	220	16,0
C22	20,8	23,3	55	220	18,7
C24	22,8	25,6	80	220	20,4
C27	25,1	28,9	80	220	22,9
C30	28,0	32,0	80	220	27,0
C33	31,0	35,0	80	220	29,7
C36	34,0	38,0	80	220	32,4
	at I_Z = 2,5 mA		at I_Z = 2,5 mA	at I_Z = 0,5 mA	at I_Z = 2,5 mA
	min.	max.	max.	max.	
C39	37,0	41,0	90	500	35,1
C43	40,0	46,0	90	600	38,7
C47	44,0	50,0	110	700	44,0
C51	48,0	54,0	125	700	49,0
C56	52,0	60,0	135	1000	55,0
C62	58,0	66,0	150	1000	62,0
C68	64,0	72,0	200	1000	70,0
C75	70,0	79,0	250	1500	78,0

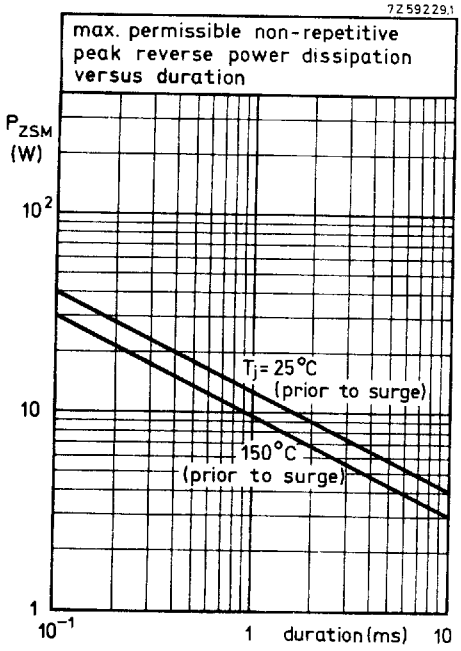


Fig. 2.

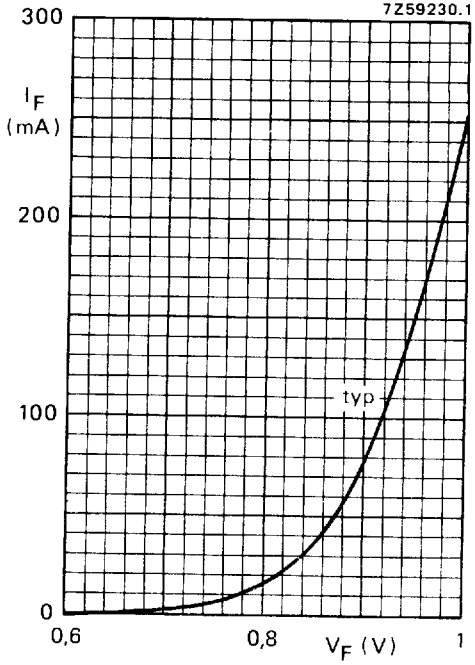


Fig. 3 T_j = 25 °C.

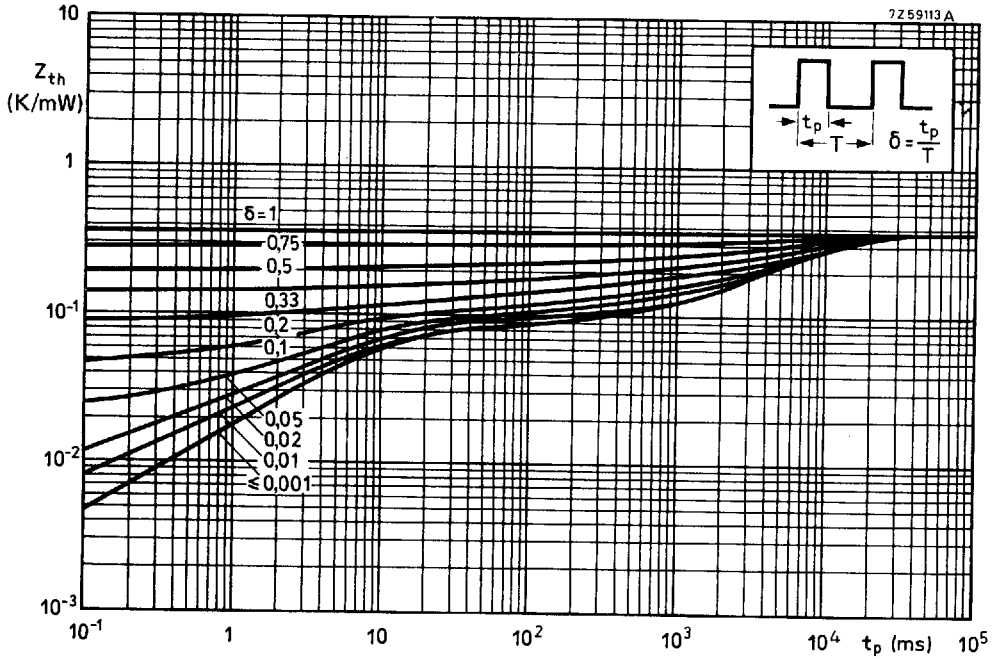


Fig. 4.