VOLTAGE REGULATOR DIODES

Silicon planar diodes in a DO-35 envelope intended for use as low power voltage stabilizers or voltage references.

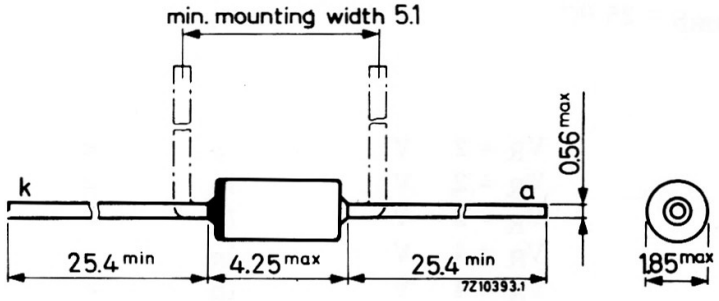
Available in two series, one with ± 5 % and the other with ± 2 % tolerance on the zener voltage. Each series consists of 30 types with nominal zener voltages ranging from 4.7 V to 75 V.

QUICK REFERENCE DATA				
Zener voltage range		nom.	4.7 to 75	V
Zener voltage tolerance			±5	%
Total power dissipation up to T_{amb} = 50 °C	P_{tot}	max.	400	mW
Non-repetitive peak reverse power	P_{ZSM}	max.	30	W
Junction temperature	T_j	max.	200	°C
Thermal resistance from junction to ambient	$R_{th\ j\text{-}a}$	=	0.38	°C/mW

MECHANICAL DATA

Dimensions in mm

DO-35



Cathode indicated by coloured mark or by broad band if colour coded (see General Section)

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

Currents

Average forward current (averaged over any 20 ms period)	I_{FAV}	max.	250	mA
Repetitive peak forward current	I_{FRM}	max.	250	mA

Power dissipation

Total power dissipation up to T_{amb} = 50 °C	P_{tot}	max.	400	mW
Non-repetitive peak reverse power t = 100 μs; T_j = 150 °C	P_{ZSM}	max.	30	W

Temperatures

Storage temperature	T_{stg}		−65 to +200	°C
Junction temperature	T_j	max.	200	°C

THERMAL RESISTANCE

From junction to ambient in free air at maximum lead length	$R_{th\ j\text{-}a}$	=	0.38	°C/mW

CHARACTERISTICS T_j = 25 °C unless otherwise specified

Forward voltage

I_F = 10 mA; T_{amb} = 25 °C	V_F	<	0.9	V

Reverse current

BZX79-.4V7	V_R = 2 V	I_R	<	3000	nA
.5V1	V_R = 2 V	I_R	<	2000	nA
.5V6	V_R = 2 V	I_R	<	1000	nA
.6V2	V_R = 4 V	I_R	<	3000	nA
.6V8	V_R = 4 V	I_R	<	2000	nA
.7V5	V_R = 5 V	I_R	<	1000	nA
.8V2	V_R = 5 V	I_R	<	700	nA
.9V1	V_R = 6 V	I_R	<	500	nA
.10	V_R = 7 V	I_R	<	200	nA
.11 to .13	V_R = 8 V	I_R	<	100	nA
.15 to .75	V_R = 0.7 V_{Znom}	I_R	<	50	nA

. = B for 2% tolerance
. = C for 5% tolerance

CHARACTERISTICS (continued) $T_j = 25\,^{o}C$ unless otherwise specified

BZX79-...	Zener voltage V_Z at I_Z = 5 mA	Temperature coefficient S_Z at I_Z = 5 mA	Differential resistance r_z at I_Z = 5 mA, f = 1 kHz	Diode capacitance C_d at f = 1 MHz; V_R = 0	
	nom.	typ.	max.	typ.	max.
.4V7	4.7 V	− 1.4 mV/°C	80 Ω	130	180 pF
.5V1	5.1 V	− 0.8 mV/°C	60 Ω	110	160 pF
.5V6	5.6 V	+ 1.2 mV/°C	40 Ω	95	140 pF
.6V2	6.2 V	+ 2.3 mV/°C	10 Ω	90	130 pF
.6V8	6.8 V	+ 3.0 mV/°C	15 Ω	85	110 pF
.7V5	7.5 V	+ 4.0 mV/°C	15 Ω	80	100 pF
.8V2	8.2 V	+ 5.0 mV/°C	15 Ω	75	95 pF
.9V1	9.1 V	+ 6.0 mV/°C	15 Ω	70	90 pF
.10	10 V	+ 7.0 mV/°C	20 Ω	70	90 pF
.11	11 V	+ 8.0 mV/°C	20 Ω	65	85 pF
.12	12 V	+ 9.0 mV/°C	25 Ω	65	85 pF
.13	13 V	+10.5 mV/°C	30 Ω	60	80 pF
.15	15 V	+12.5 mV/°C	30 Ω	55	75 pF
.16	16 V	+13.0 mV/°C	40 Ω	52	75 pF
.18	18 V	+15.0 mV/°C	45 Ω	47	70 pF
.20	20 V	+17.0 mV/°C	55 Ω	36	60 pF
.22	22 V	+19.0 mV/°C	55 Ω	34	60 pF
.24	24 V	+21.0 mV/°C	70 Ω	33	55 pF
	at I_Z = 2 mA	at I_Z = 2 mA	at I_Z = 2 mA		
	nom.	typ.	max.	typ.	max.
.27	27 V	+23.5 mV/°C	80 Ω	30	50 pF
.30	30 V	+ 26 mV/°C	80 Ω	27	50 pF
.33	33 V	+ 29 mV/°C	80 Ω	25	45 pF
.36	36 V	+ 31 mV/°C	90 Ω	23	45 pF
.39	39 V	+ 34 mV/°C	130 Ω	21	45 pF
.43	43 V	+ 37 mV/°C	150 Ω	21	40 pF
.47	47 V	+ 40 mV/°C	170 Ω	19	40 pF
.51	51 V	+ 44 mV/°C	180 Ω	19	40 pF
.56	56 V	+ 47 mV/°C	200 Ω	18	40 pF
.62	62 V	+ 51 mV/°C	215 Ω	17	35 pF
.68	68 V	+ 56 mV/°C	240 Ω	17	35 pF
.75	75 V	+ 60 mV/°C	255 Ω	16.5	35 pF