

VOLTAGE REGULATOR DIODES

Silicon diodes in a DO-15 plastic envelope intended for general purpose use as low power voltage regulators.

The series consists of 26 types with nominal zener voltages ranging from 7.5 V to 75 V with a tolerance of $\pm 5\%$.

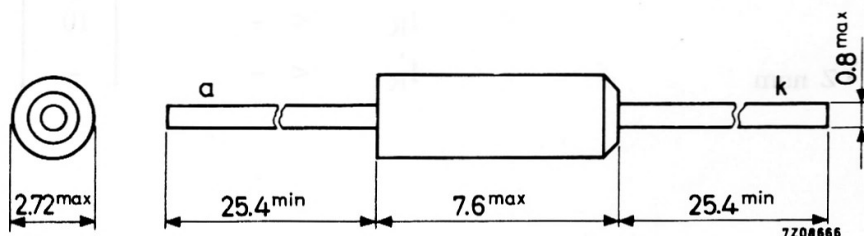
QUICK REFERENCE DATA

Zener voltage range		nom.	7.5 to 75	V
Zener voltage tolerance			± 5	%
Peak zener current	I_{ZM}	max.	3	A
Total power dissipation up to $T_{amb} = 25\text{ }^{\circ}\text{C}$	P_{tot}	max.	1	W
Junction temperature	T_j	max.	175	$^{\circ}\text{C}$
Thermal resistance from junction to ambient	$R_{th\ j-a}$	=	0.15	$^{\circ}\text{C/mW}$

MECHANICAL DATA

Dimensions in mm

DO-15



The coned end indicates the cathode

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. 1 A

Peak zener current

I_{ZM} max. 3 A

Power dissipation

Total power dissipation up to $T_{amb} = 25^{\circ}C$

P_{tot} max. 1 W

Temperatures

Storage temperature

T_{stg} -65 to +175 $^{\circ}C$

Junction temperature

T_j max. 175 $^{\circ}C$

THERMAL RESISTANCE

From junction to ambient in free air

$R_{th\ j-a}$ = 0.15 $^{\circ}C/mW$

CHARACTERISTICS

$T_j = 25^{\circ}C$ unless otherwise specified

Forward voltage

$I_F = 100\text{ mA}$; $T_{amb} = 25^{\circ}C$

V_F typ. 0.86 V
< 1.1 V

Reverse current

$V_R = 3\text{ V}$

	BZX61-C7V5 to 8V2	C9V1	C10 to C75
I_R	< 10	-	- μA
I_R	< -	10	- μA
I_R	< -	-	5 μA

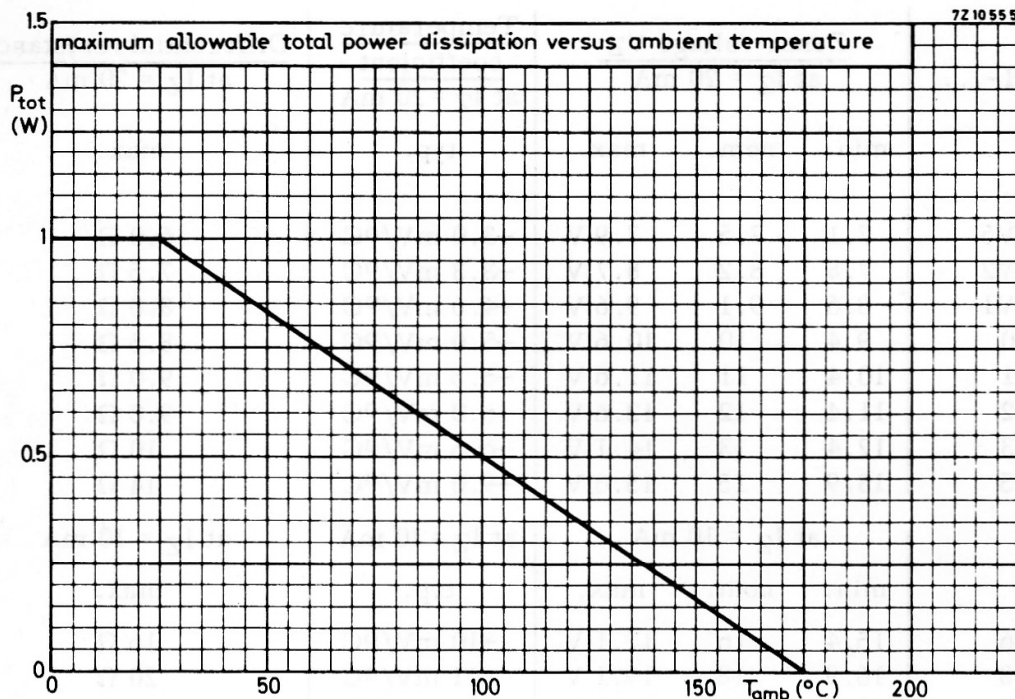
$V_R = 5\text{ V}$

$V_R = \frac{2}{3} \cdot V_Z\text{ nom}$

CHARACTERISTICS (continued)

$T_j = 25\text{ }^{\circ}\text{C}$ unless otherwise specified

BZX61-...	<u>Zener voltage V_Z</u> at $I_Z = 20\text{ mA}$			<u>Temperature coefficient</u> at $I_Z = 20\text{ mA}$	<u>Differential resistance</u> at $I_Z = 20\text{ mA}$
	min.	nom.	max.	typ.	max.
C7V5	7.1	7.5	7.9 V	+3.0 mV/ $^{\circ}\text{C}$	6.0 Ω
C8V2	7.8	8.2	8.7 V	+3.3 mV/ $^{\circ}\text{C}$	7.5 Ω
C9V1	8.6	9.1	9.6 V	+4.6 mV/ $^{\circ}\text{C}$	8.0 Ω
C10	9.4	10	10.6 V	+5.0 mV/ $^{\circ}\text{C}$	8.5 Ω
C11	10.4	11	11.6 V	+5.5 mV/ $^{\circ}\text{C}$	9.0 Ω
C12	11.4	12	12.6 V	+6.0 mV/ $^{\circ}\text{C}$	9.0 Ω
C13	12.4	13	14.1 V	+6.5 mV/ $^{\circ}\text{C}$	10 Ω
C15	13.9	15	15.6 V	+9.0 mV/ $^{\circ}\text{C}$	14 Ω
	at $I_Z = 10\text{ mA}$			at $I_Z = 10\text{ mA}$	at $I_Z = 10\text{ mA}$
	min.	nom.	max.	typ.	max.
C16	15.4	16	17.1 V	+10 mV/ $^{\circ}\text{C}$	16 Ω
C18	16.9	18	19.1 V	+11 mV/ $^{\circ}\text{C}$	20 Ω
C20	18.9	20	21.2 V	+12 mV/ $^{\circ}\text{C}$	22 Ω
C22	20.8	22	23.3 V	+13 mV/ $^{\circ}\text{C}$	23 Ω
C24	22.7	24	25.9 V	+14 mV/ $^{\circ}\text{C}$	25 Ω
C27	25.1	27	28.9 V	+16 mV/ $^{\circ}\text{C}$	35 Ω
C30	28	30	32 V	+21 mV/ $^{\circ}\text{C}$	40 Ω
C33	31	33	35 V	+23 mV/ $^{\circ}\text{C}$	45 Ω
C36	34	36	38 V	+25 mV/ $^{\circ}\text{C}$	50 Ω
	at $I_Z = 5\text{ mA}$			at $I_Z = 5\text{ mA}$	at $I_Z = 5\text{ mA}$
	min.	nom.	max.	typ.	max.
C39	37	39	41 V	+27 mV/ $^{\circ}\text{C}$	60 Ω
C43	40	43	45 V	+30 mV/ $^{\circ}\text{C}$	70 Ω
C47	44	47	50 V	+38 mV/ $^{\circ}\text{C}$	80 Ω
C51	48	51	54 V	+41 mV/ $^{\circ}\text{C}$	95 Ω
C56	53	56	60 V	+45 mV/ $^{\circ}\text{C}$	105 Ω
C62	58	62	66 V	+50 mV/ $^{\circ}\text{C}$	110 Ω
C68	64	68	72 V	+54 mV/ $^{\circ}\text{C}$	120 Ω
C75	71	75	79 V	+60 mV/ $^{\circ}\text{C}$	135 Ω



SOLDERING AND MOUNTING NOTES

1. Soldered joints must be at least 5 mm from the seal.
2. The maximum permissible temperature of the soldering iron or bath is 245°C ; it must be in contact with the joint for no more than 5 seconds.
3. Avoid hot spots due to handling or mounting; the body of the device must not come into contact with or be exposed to a temperature higher than 175°C .