

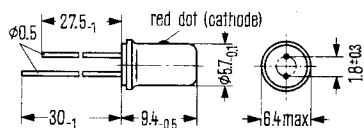
## Silicon Z-diodes

Silicon Z-diodes type BZY 83 and BZY 85 are available with 5% tolerance (C) and 10% tolerance (D). BZY 83 is provided with a metal case 1A2 DIN 41871 and may be operated in free air as well as mounted on a chassis with a cooling fin (heat sink). BZY 85 is provided with a glass case 51A2 DIN 41880 (DO-7). They are suitable for stabilizing and limiting voltages as well as for generating reference voltages at low power requirements. The cathode lead is marked by a red dot (BZY 83) or a colour ring (BZY 85).

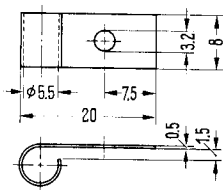
Type	Order number	Type	Order number
BZY 83/C4V7	Q 60225-Y83-J1	■ BZY 85/C4V7	Q 60225-Y85-J47
BZY 83/C5V1	Q 60225-Y83-J2	■ BZY 85/C5V1	Q 60225-Y85-J51
BZY 83/C5V6	Q 60225-Y93-J3	■ BZY 85/C5V6	Q 60225-Y85-J56
BZY 83/C6V2	Q 60225-Y83-J4	■ BZY 85/C6V2	Q 60225-Y85-J62
BZY 83/C6V8	Q 60225-Y83-J5	■ BZY 85/C6V8	Q 60225-Y85-J68
BZY 83/C7V5	Q 60225-Y83-J6	■ BZY 85/C7V5	Q 60225-Y85-J75
BZY 83/C8V2	Q 60225-Y83-J7	■ BZY 85/C8V2	Q 60225-Y85-J82
BZY 83/C9V1	Q 60225-Y83-J8	■ BZY 85/C9V1	Q 60225-Y85-J91
BZY 83/C10	Q 60225-Y83-J9	■ BZY 85/C10	Q 60225-Y85-J100
BZY 83/C11	Q 60225-Y83-J10	■ BZY 85/C11	Q 60225-Y85-J110
BZY 83/C12	Q 60225-Y83-J11	■ BZY 85/C12	Q 60225-Y85-J120
BZY 83/C13	Q 60225-Y83-J20	■ BZY 85/C13	Q 60225-Y85-J936
BZY 83/C15	Q 60225-Y83-J13	■ BZY 85/C15	Q 60225-Y85-J150
BZY 83/C16	Q 60225-Y83-J21	■ BZY 85/C16	Q 60225-Y85-J937
BZY 83/C18	Q 60225-Y83-J15	■ BZY 85/C18	Q 60225-Y85-J180
BZY 83/C20	Q 60225-Y83-J16	■ BZY 85/C20	Q 60225-Y85-J200
BZY 83/C22	Q 60225-Y83-J17	■ BZY 85/C22	Q 60225-Y85-J220
BZY 83/C24	Q 60225-Y83-J22	■ BZY 85/C24	Q 60225-Y85-J938
BZY 83/D1	Q 60225-Y83-K1	■ BZY 85/D1	Q 60225-Y85-K10
BZY 83/D4V7	Q 60225-Y83-K2	■ BZY 85/D4V7	Q 60225-Y85-K47
BZY 83/D5V6	Q 60225-Y83-K3	■ BZY 85/D5V6	Q 60225-Y85-K56
BZY 83/D6V8	Q 60225-Y83-K4	■ BZY 85/D6V8	Q 60225-Y85-K68
BZY 83/D8V2	Q 60225-Y83-K5	■ BZY 85/D8V2	Q 60225-Y85-K82
BZY 83/D10	Q 60225-Y83-K6	■ BZY 85/D10	Q 60225-Y85-K100
BZY 83/D12	Q 60225-Y83-K7	■ BZY 85/D12	Q 60225-Y85-K120
BZY 83/D15	Q 60225-Y83-K8	■ BZY 85/D15	Q 60225-Y85-K150
BZY 83/D18	Q 60225-Y83-K9	■ BZY 85/D18	Q 60225-Y85-K180
BZY 83/D22	Q 60225-Y83-K10	■ BZY 85/D22	Q 60225-Y85-K220
Heat sink	Q 62901-B1		

# BZY 83 C, BZY 83 D, BZY 85 C, BZY 85 D

## BZY 83

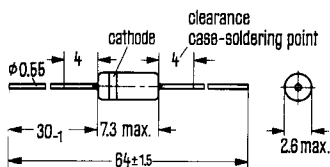


Weight approx. 1 g Dimensions in mm



heat sink

## BZY 85



Weight approx. 0.2 g Dimensions in mm

## Maximum ratings

Forward current

$I_F$

BZY 83

200

BZY 85

200

mA

Maximum current

$I_{FM}$

300

300

mA

Junction temperature

$T_J$

150

150

°C

Ambient temperature

$T_{amb}$

-55 to +125

-55 to +150

°C

Total power dissipation

( $T_{amb} = 45^\circ\text{C}$ )

$P_{tot}$

300<sup>1)</sup>

—

mW

Total power dissipation

( $T_{amb} = 25^\circ\text{C}$ )

$P_{tot}$

250

400<sup>2)</sup>

mW

## Thermal resistance

between junction and static

ambient air

$R_{thJamb}$

< 500

< 310<sup>2)</sup>

K/W

between junction and case

$R_{thJcase}$

< 250

—

K/W

When mounted on a chassis of

sheet aluminium 12 cm<sup>2</sup> in area

with cooling fin (heat sink)

$R_{thL}$

< 350

—

K/W

## Static characteristic ( $T_{amb} = 25^\circ\text{C}$ )

Forward voltage ( $I_F = 100\text{ mA}$ )

$V_F$

0.8 (<1.0)\*

0.9 (<1.0)\*

V

Current and voltage data see following table

<sup>1)</sup> When mounted on a chassis of sheet aluminium 12 cm<sup>2</sup> in area with cooling fin (heat sink)  $R_{thL} = 350\text{ K/W}$

<sup>2)</sup> clearance case soldering point 4 mm ( $T_{case} = \text{max. } 25^\circ\text{C}$ )

\* AQL=0.65%

## Delivery program BZY 83

Type	Nominal voltage	$I_{\text{ztest}} = 5 \text{ mA}$			$I_{\text{R}}^*)$ at	$V_{\text{R}}^*)$ at	$I_{\text{Zmax}}^1)$
		$V_{\text{Z}}\text{-range}^*)$ (V)	$r_{\text{zdyn}}^*)$ ( $\Omega$ )	$r_{\text{Zstat}}$ ( $\Omega$ )	$V_{\text{R}} =$ 1 V (nA)	$I_{\text{R}} =$ 1 $\mu\text{A}$ (V)	$T_{\text{amb}} =$ 45 °C (mA)
BZY 83/C4V7	4.7	4.4 to 5.0	66 < 90	66	< 500	> 1	52
BZY 83/C5V1	5.1	4.8 to 5.4	48 < 75	48	< 500	> 1	48
BZY 83/C5V6	5.6	5.2 to 6.0	20 < 60	20	< 500	> 1	43.5
BZY 83/C6V2	6.2	5.8 to 6.6	8 < 40	11	< 500	> 1	39.5
BZY 83/C6V8	6.8	6.4 to 7.2	3.5 < 8	9	< 100	> 1.5	36
BZY 83/C7V5	7.5	7.0 to 7.9	3.5 < 6	10	< 100	> 1.5	33
BZY 83/C8V2	8.2	7.7 to 8.7	4 < 7	14	< 100	> 3	30
BZY 83/C9V1	9.1	8.5 to 9.6	5.5 < 10	18	< 100	> 3	27
BZY 83/C10	10	9.4 to 10.6	7 < 15	24	< 100	> 4.5	24.5
BZY 83/C11	11	10.4 to 11.6	9.5 < 20	31	< 100	> 4.5	22
BZY 83/C12	12	11.4 to 12.7	12 < 30	39	< 100	> 6.5	20.2
BZY 83/C13	13	12.4 to 14.1	17 < 30	54	< 100	> 6.5	18.4
BZY 83/C15	15	13.8 to 15.6	24 < 55	70	< 100	> 9.5	16.8
BZY 83/C16	16	15.3 to 17.1	34 < 75	92	< 100	> 9.5	15.3
BZY 83/C18	18	16.8 to 19.1	47 < 110	120	< 100	> 9.5	13.6
BZY 83/C20	20	18.8 to 21.2	70 < 150	160	< 100	> 9.5	12.3
BZY 83/C22	22	20.8 to 23.3	95 < 170	205	< 100	> 11.5	11.3
BZY 83/C24	24	22.8 to 25.6	120 < 200	250	< 100	> 11.5	10.2
BZY 83/D1 <sup>2)</sup>	0.7	0.62 to 0.78	8	—	—	> 1	200
BZY 83/D4V7	4.7	4.1 to 5.2	66 < 90	66	< 500	> 1	49
BZY 83/D5V6	5.6	5.0 to 6.3	20 < 75	20	< 500	> 1	41
BZY 83/D6V8	6.8	6.0 to 7.5	3.5 < 15	9	< 100	> 1.5	35
BZY 83/D8V2	8.2	7.3 to 9.2	4 < 10	14	< 100	> 3	28.2
BZY 83/D10	10	8.8 to 11.0	7 < 15	24	< 100	> 4.5	23.5
BZY 83/D12	12	10.7 to 13.4	12 < 30	39	< 100	> 6.5	19
BZY 83/D15	15	13 to 16.5	24 < 55	70	< 100	> 9.5	15.6
BZY 83/D18	18	16 to 20	47 < 100	120	< 100	> 9.5	13
BZY 83/D22	22	19.6 to 24.4	95 < 200	205	< 100	—	10.6

<sup>1)</sup> When mounted on a chassis of sheet aluminium 12 cm<sup>2</sup> in area with cooling fin (heat sink)

<sup>2)</sup> The BZY 83 D1 is a diode with very small tolerances to be used in forward direction. The cathode is marked by a red dot and has to be connected with the minus pole of the voltage supply

\* AQL=0.65%

## Delivery program BZY 85

Not for new development	Type	Nominal voltage	$I_{ztest} = 5 \text{ mA}$			$I_R^*)$ at	$V_R^*)$ at	$I_{Zmax}^1)$
		(V)	$V_Z$ -range *)	$r_{zdyn}^*)$	$r_{zstat}$	$V_R = 1 \text{ P}$	$I_R = 1 \mu\text{A}$	$T_L^2) = 45^\circ\text{C}$
			(V)	( $\Omega$ )	( $\Omega$ )	(nA)	(V)	(mA)
	BZY 85/C4V7	4.7	4.4 to 5.0	70	70	<500	>1	55
	BZY 85/C5V1	5.1	4.8 to 5.4	60	64	<500	>1	52
	BZY 85/C5V6	5.6	5.2 to 6.0	40	47	<500	>1	49
	BZY 85/C6V2	6.2	5.8 to 6.6	10	23	<100	>1	45
	BZY 85/C6V8	6.8	6.4 to 7.2	8	24	<100	>1.5	41
	BZY 85/C7V5	7.5	7.0 to 7.9	7	29	<100	>1.5	37
	BZY 85/C8V2	8.2	7.7 to 8.7	7	36	<100	>3	33
	BZY 85/C9V1	9.1	8.5 to 9.6	10	47	<100	>3	30
	BZY 85/C10	10	9.4 to 10.6	15	60	<100	>4.5	28
	BZY 85/C11	11	10.4 to 11.6	20	74	<100	>4.5	25
	BZY 85/C12	12	11.4 to 12.7	20	91	<100	>6.5	22.5
	BZY 85/C13	13	12.4 to 14.1	26	108	<100	>6.5	20.5
	BZY 85/C15	15	13.8 to 15.6	30	138	<100	>9.5	19
	BZY 85/C16	16	15.3 to 17.1	40	177	<100	>9.5	17
	BZY 85/C18	18	16.8 to 19.1	55	226	<100	>9.5	15
	BZY 85/C20	20	18.8 to 21.2	55	275	<100	>9.5	14
	BZY 85/C22	22	20.8 to 23.3	55	319	<100	>11.5	12.5
	BZY 85/C24	24	22.8 to 25.6	80	408	<100	>11.5	11
	BZY 85/D1 <sup>3)</sup>	0.7	0.62 to 0.78	8	7.6	—	>1	200
	BZY 85/D4V7	4.7	4.1 to 5.2	85	95	1000	>1	55
	BZY 85/D5V6	5.6	5.0 to 6.3	75	85	<500	>1	49
	BZY 85/D6V8	6.8	6.0 to 7.5	15	33	<100	>1.5	45
	BZY 85/D8V2	8.2	7.3 to 9.2	10	43	<100	>3	41
	BZY 85/D10	10	8.8 to 11.0	15	65	<100	>4.5	28
	BZY 85/D12	12	10.7 to 13.4	30	110	<100	>6.5	22.5
	BZY 85/D15	15	13 to 16.5	55	185	<100	>9.5	19
	BZY 85/D18	18	16 to 20	55	255	<100	>9.5	15
	BZY 85/D22	22	19.6 to 24.4	55	355	<100	>9.5	12.5

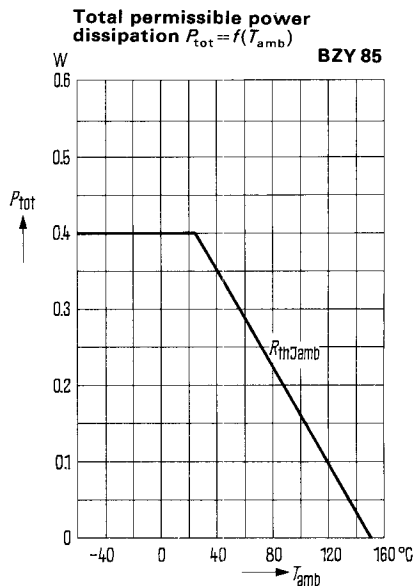
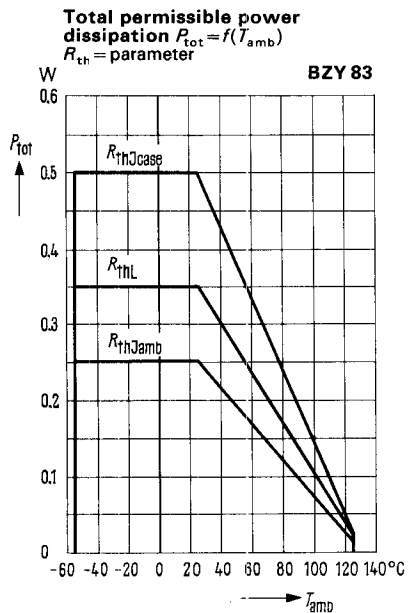
<sup>1)</sup> Clearance case soldering point 4 mm ( $T_{case} = \text{max. } 45^\circ\text{C}$ )

<sup>2)</sup>  $T_L$  = temperature at soldered joint 4 mm away from case

<sup>3)</sup> The BZY 85/D1 is a diode with very small tolerances to be used in forward direction. The anode is marked by a colour ring

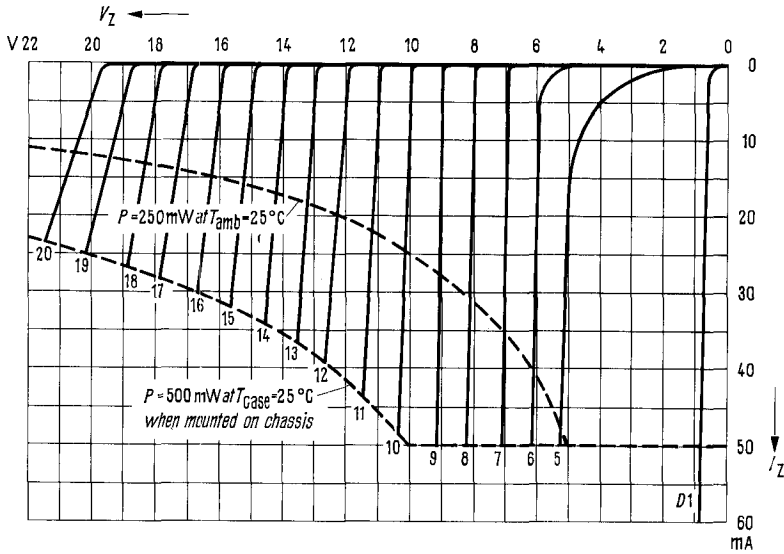
\* AQL = 0.65%

# BZY 83 C, BZY 83 D, BZY 85 C, BZY 85 D



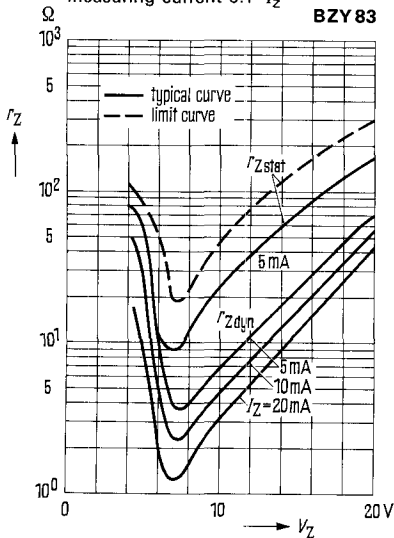
Characteristics within the Z-range (mean values)  $V_Z = f(I_Z)$ ; ( $T_{amb} = 25^\circ\text{C}$ )

**BZY 83**



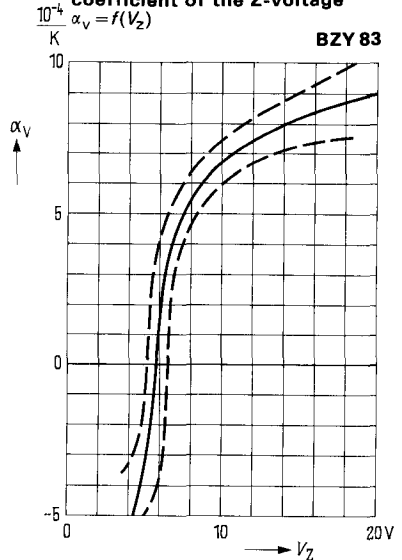
Static and dynamic  
Z-resistance  $r_Z = f(V_Z)$   
 $T_{amb} = 25^\circ\text{C}$ ; measured at  $f = 50 \text{ Hz}$   
measuring current  $0.1 \cdot I_Z$

**BZY 83**

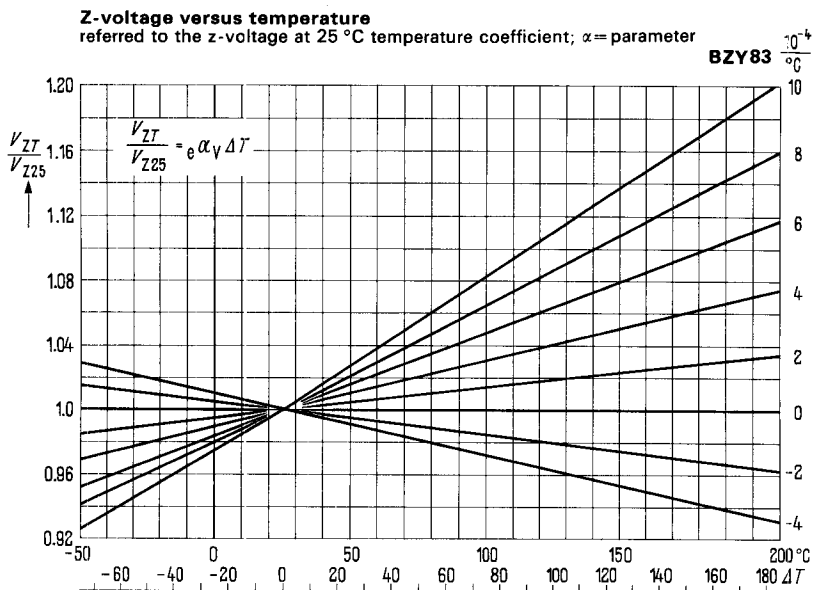
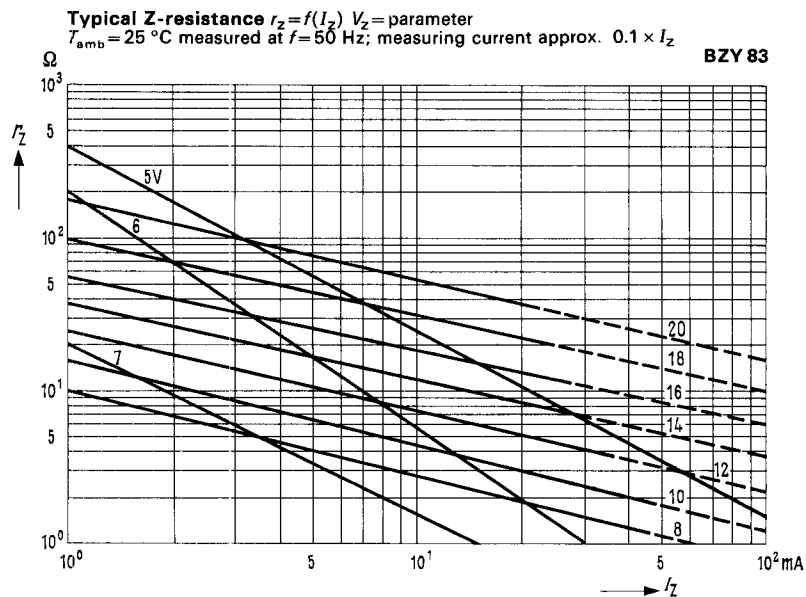


Relative temperature  
coefficient of the Z-voltage  
 $\alpha_V = f(V_Z)$

**BZY 83**



# BZY 83 C, BZY 83 D



# BZY 83 C, BZY 83 D, BZY 85 C, BZY 85 D

