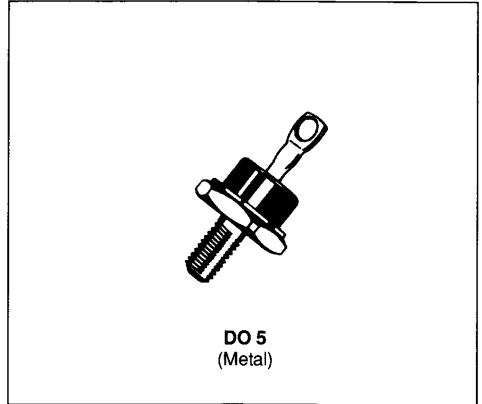


## RECTIFIER DIODES

- STANDARD RECTIFIER
- HIGH SURGE CURRENT CAPABILITY
- LOW FORWARD VOLTAGE DROP



### ABSOLUTE RATINGS (limiting values)

Symbol	Parameter		Value	Unit
$I_{F(AV)}$	Average Forward Current*	$T_c = 150^\circ\text{C}$	20	A
$I_{FSM}$	Surge non Repetitive Forward Current	$t_p = 10\text{ms}$ Sinusoidal	450	A
$P_{tot}$	Power Dissipation*	$T_c = 150^\circ\text{C}$	25	W
$T_{stg}$ $T_j$	Storage and Junction Temperature Range		- 55 to 175	$^\circ\text{C}$

Symbol	Parameter	1N							RN		Unit
		248B	249B	250B	1195A	1196A	1197A	1198A	820	1120	
$V_{RRM}$	Repetitive Peak Reverse Voltage	50	100	200	300	400	500	600	800	1000	V

### THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	1	$^\circ\text{C/W}$

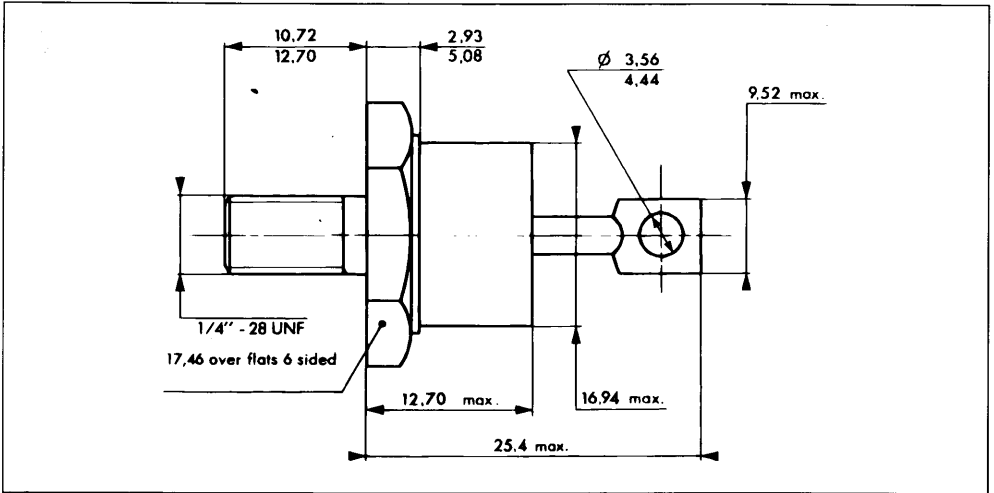
### ELECTRICAL CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
$I_R$	$T_j = 150^\circ\text{C}$	$V_R = V_{RRM}$			5	mA
$V_F$	$T_j = 25^\circ\text{C}$	$I_F = 70\text{A}$			1.5	V

\* Single phase, half wave, resistive or inductive load

PACKAGE MECHANICAL DATA

DO 5 Metal



Cooling method : by conduction (method C)

Marking : Cathode connected to case : type number

Anode connected to case : type number + suffix R (consult us for these reverse version datasheets)

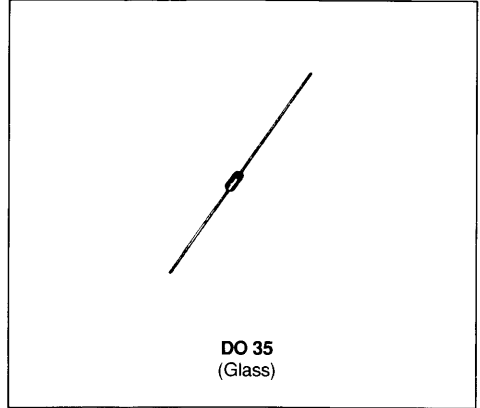
Weight : 18,84g

Recommended torque value : 250cm. N

Maximum torque value : 310cm. N

**ZENER DIODES**

- VOLTAGE RANGE : 1.8V TO 27V


**DESCRIPTION**

Designed for 250mW applications requiring low leakage low noise. Zener impedance and Zener voltage specified for low level operation at  $I_{z1} = 250\mu\text{A}$ .

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	Value	Unit
$P_{tot}$	Power Dissipation	$T_{amb} = 25^\circ\text{C}$ 250	mW
$I_{zM}$	Continuous Reverse Current	$T_{amb} = 25^\circ\text{C}$ See page 2	mA
$T_{stg}$ $T_j$	Storage and Junction Temperature Range	- 65 to 200	$^\circ\text{C}$
$T_L$	Maximum Lead Temperature for soldering during 10s at 4mm from case	230	$^\circ\text{C}$

**THERMAL RESISTANCE**

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	250	$^\circ\text{C/W}$

\* On infinite heatsink with 4mm lead length.

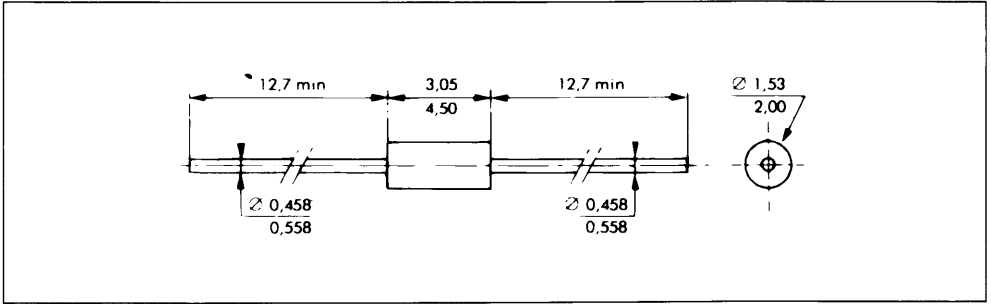
ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C)

Type	V <sub>ZT</sub> /I <sub>ZT</sub> (1)	I <sub>ZT</sub> (μA)	r <sub>ZT</sub> /I <sub>ZT</sub> (2) (Ω)	I <sub>R</sub> / V <sub>R</sub>		Noise Density @ 250μA max (μV/√Hz)	I <sub>ZM</sub> max (mA)
	nom (V)			(μA)	(V)		
1N4614	1.8	250	1200	7.5	1.0	1.0	120
1N4615	2.0	250	1250	5.0	1.0	1.0	110
P 1N4616	2.2	250	1300	4.0	1.0	1.0	100
1N4617	2.4	250	1400	2.0	1.0	1.0	95
1N4618	2.7	250	1500	1.0	1.0	1.0	90
1N4619	3.0	250	1600	0.8	1.0	1.0	85
P 1N4620	3.3	250	1650	7.5	1.5	1.0	80
P 1N4621	3.6	250	1700	7.5	2.0	1.0	75
P 1N4622	3.9	250	1650	5.0	2.0	1.0	70
P 1N4623	4.3	250	1600	4.0	2.0	1.0	65
P 1N4624	4.7	250	1550	10	3.0	1.0	60
P 1N4625	5.1	250	1500	10	3.0	2.0	55
1N4626	5.6	250	1400	10	4.0	4.0	50
1N4627	6.2	250	1200	10	5.0	5.0	45
1N4099	6.8	250	200	10	5.2	40	35
1N4100	7.5	250	200	10	5.7	40	31.8
1N4101	8.2	250	200	1.0	6.3	40	29.0
1N4102	8.7	250	200	1.0	6.7	40	27.4
1N4103	9.1	250	200	1.0	7.0	40	26.2
1N4104	10	250	200	1.0	7.6	40	24.8
1N4105	11	250	200	0.05	3.5	40	21.6
1N4106	12	250	200	0.05	9.2	40	20.4
1N4107	13	250	200	0.05	9.9	40	19.0
1N4108	14	250	200	0.05	10.7	40	17.5
1N4109	15	250	100	0.05	11.4	40	16.3
1N4110	16	250	100	0.05	12.2	40	15.4
1N4111	17	250	100	0.05	13.0	40	14.5
1N4112	18	250	100	0.05	13.7	40	13.2
1N4113	19	250	150	0.05	14.5	40	12.5
1N4114	20	250	150	0.01	15.2	40	11.9
1N4115	22	250	150	0.01	16.8	40	10.8
1N4116	24	250	150	0.01	18.3	40	9.9
1N4117	25	250	150	0.01	19.0	40	9.5
1N4118	27	250	150	0.01	20.5	40	8.8

- (1) Tolerance on nominal V<sub>ZT</sub> : ± 5%  
 (2) Measured @ DC test current with 10% AC superimposed (50Hz).  
 P : Preferred voltages.  
 Forward voltage drop : V<sub>F</sub> ≤ 1V (T<sub>amb</sub> = 25°C, I<sub>F</sub> = 0.2A)

## PACKAGE MECHANICAL DATA

DO 35 Glass

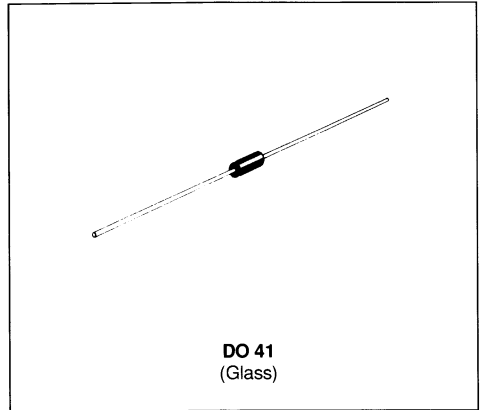


Cooling method : by convection and conduction.  
Marking : clear, ring at cathode end.  
Weight : 0.15g



ZENER DIODES

- LARGE VOLTAGE RANGE : 3.3V TO 200V
- DOUBLE SLUG TYPE CONSTRUCTION



**DESCRIPTION**

1W hermetically sealed glass silicon Zener diodes.

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter		Value	Unit
$P_{tot}$	Power Dissipation*	$T_{amb} = 50^{\circ}C$	1	W
$I_{ZM}$	Continuous Reverse Current	$T_{amb} = 50^{\circ}C$	See page 2	mA
$I_{ZSM}$	Peak Reverse Current	$T_{amb} = 25^{\circ}C$	See page 2	mA
$T_{stg}$ $T_j$	Storage and Junction Temperature Range		- 65 to 200	$^{\circ}C$
$T_L$	Maximum Lead Temperature for Soldering during 10s at 4mm from Case		230	$^{\circ}C$

**THERMAL RESISTANCE**

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	150	$^{\circ}C/W$

\* On infinite heatsink with 4mm lead length.

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}\text{C}$  unless otherwise specified)

Types	$V_{ZT}/I_{ZT}^*$	$r_{ZT}/I_{ZT}^*$	$I_{ZT}^*$	$r_{ZK}/I_{ZK}$		$\infty V_Z$	$I_R/V_R$	$V_R$	$I_{ZM}$ $T_{amb}$ $50^{\circ}\text{C}$	$I_{ZSM}^{**}$
	nom (V)	max ( $\Omega$ )	(mA)	max ( $\Omega$ )	(mA)	typ ( $10^{-4}/^{\circ}\text{C}$ )	max ( $\mu\text{A}$ )	(V)	(mA)	(mA)
P 1N 4728 A	3,3	10	76	400	1	-6	100	1.0	276	2381
1N 4729 A	3,6	10	69	400	1	-6	100	1.0	252	2193
P 1N 4730 A	3,9	9	64	400	1	-5	50	1.0	234	2033
1N 4731 A	4,3	9	58	400	1	-3	10	1.0	217	1812
P 1N 4732 A	4,7	8	53	500	1	-1	10	1.0	193	1667
P 1N 4733 A	5,1	7	49	550	1	1	10	1.0	178	1543
P 1N 4734 A	5,6	5	45	600	1	3	10	2.0	162	1389
P 1N 5135 B	6,2	2	41	700	1	4	10	3.0	146	1263
P 1N 4736 A	6,8	3,5	37	700	1	5	10	4.0	133	1157
P 1N 4737 A	7,5	4	34	700	0,5	5	10	5.0	121	1055
P 1N 4738 A	8,2	4,5	31	700	0,5	6	10	6.0	110	958
P 1N 4739 A	9,1	5	28	700	0,5	6	10	7.0	100	868
P 1N 4740 A	10	7	25	700	0,25	7	10	7.6	91	786
1N 4741 A	11	8	23	700	0,25	7	5	8.4	83	718
P 1N 4742 A	12	9	21	700	0,25	7	5	9.1	76	656
1N 4743 A	13	10	19	700	0,25	7	5	9.9	69	591
P 1N 4744 A	15	14	17	700	0,25	8	5	11.4	61	534
P 1N 4745 A	16	16	15,5	700	0,25	8	5	12.2	57	487
P 1N 4746 A	18	20	14	750	0,25	8	5	13.7	50	436
P 1N 4747 A	20	22	12,5	750	0,25	8	5	15.2	45	393
P 1N 4748 A	22	23	11,5	750	0,25	8	5	16.7	41	358
P 1N 4749 A	24	25	10,5	750	0,25	8	5	18.2	38	326
P 1N 4750 A	27	35	9,5	750	0,25	9	5	20.6	34	288
P 1N 4751 A	30	40	8,5	1000	0,25	9	5	22.8	30	260
P 1N 4752 A	33	45	7,5	1000	0,25	9	5	25.1	27	238
P 1N 4753 A	36	50	7,0	1000	0,25	9	5	27.4	25	219
1N 4754 A	39	60	6,5	1000	0,25	9	5	29.7	23	203
1N 4755 A	43	70	6,0	1500	0,25	9	5	32.7	22	181
1N 4756 A	47	80	5,5	1500	0,25	9	5	35.8	19	167
1N 4757 A	51	95	5,0	1500	0,25	9	5	38.8	18	154
1N 4758 A	56	110	4,5	2000	0,25	9	5	42.6	16	139
P 1N 4759 A	62	125	4,0	2000	0,25	9	5	47.1	14	126
1N 4760 A	68	150	3,7	2000	0,25	9	5	51.7	13	116
1N 4761 A	75	175	3,3	2000	0,25	9	5	56	12	104
1N 4762 A	82	200	3,0	3000	0,25	9	5	62.2	11	96
1N 4763 A	91	250	2,8	3000	0,25	9	5	69.2	10	87
1N 4764 A	100	350	2,5	3000	0,25	9	5	76	9	79
1N 4187 B	110	450	2,3	4000	0,25	10	5	83.6	8,6	72
1N 4188 B	120	550	2,0	4500	0,25	10	5	91.2	7,8	66
1N 4189 B	130	700	1,9	5000	0,25	10	5	98.8	7	59
1N 4190 B	150	1000	1,7	6000	0,25	10	5	114	6,4	53
1N 4191 B	160	1100	1,6	6500	0,25	10	5	121.6	5,8	49
1N 4192 B	180	1200	1,4	7000	0,25	10	5	136.8	5,2	44
1N 4193 B	200	1500	1,2	8000	0,25	10	5	152	4,7	39

\* Measure under thermal equilibrium and DC current test conditions.

\*\* Rectangular waveform ( $t_p = 10\text{ms}$ ).

Tolerance on nominal  $V_{ZT}$  value :  $\pm 5\%$ .

P : Preferred voltages.

Tight tolerances on preferred voltages : 1N 47... C :  $\pm 2\%$  - 1N 47... D :  $\pm 1\%$ .

Forward voltage drop :  $V_F \leq 1.2\text{V}$  ( $T_{amb} = 25^{\circ}\text{C}$ ,  $I_F = 0.2\text{A}$ ).

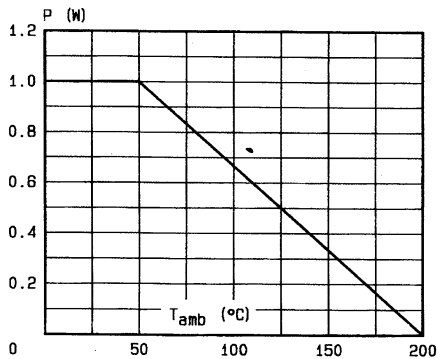


Fig.1 - Power dissipation versus ambient temperature on infinite heatsink.

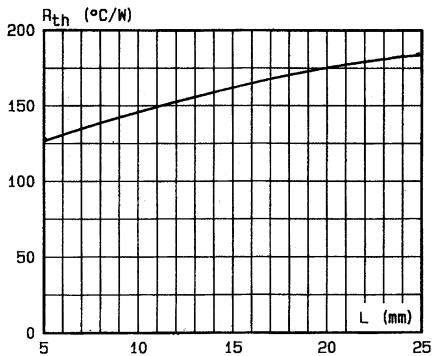


Fig.2 - Thermal resistance versus lead length on infinite heatsink.

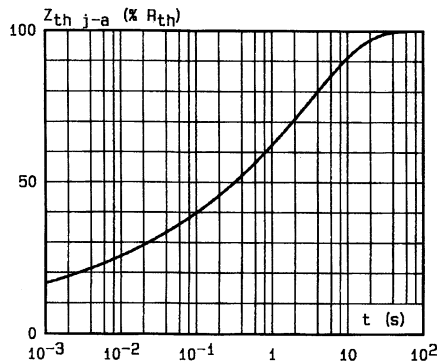


Fig.3 - Transient thermal impedance junction-ambient versus pulse duration.

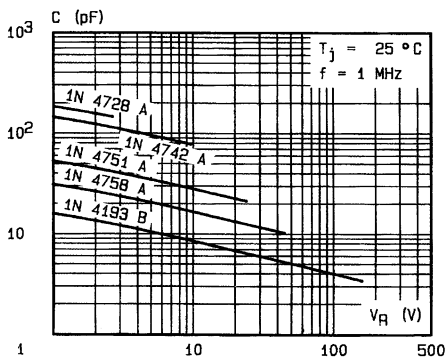


Fig.4 - Capacitance versus reverse applied voltage.

INFINITE HEATSINK

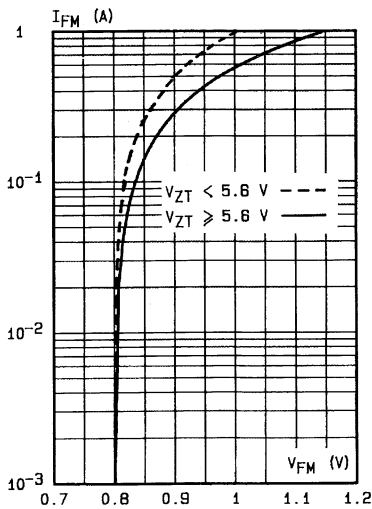
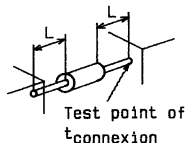


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).



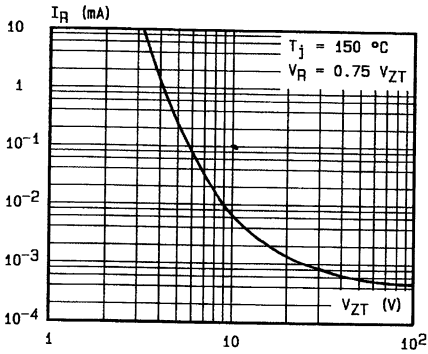


Fig.6 - Reverse current versus regulation voltage (maximum values).

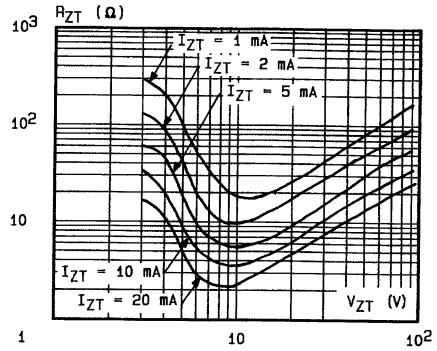


Fig.7 - Differential resistance versus regulation voltage (maximum values).

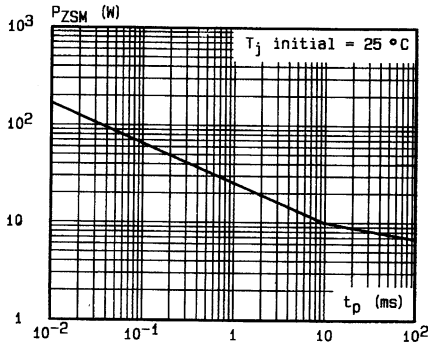
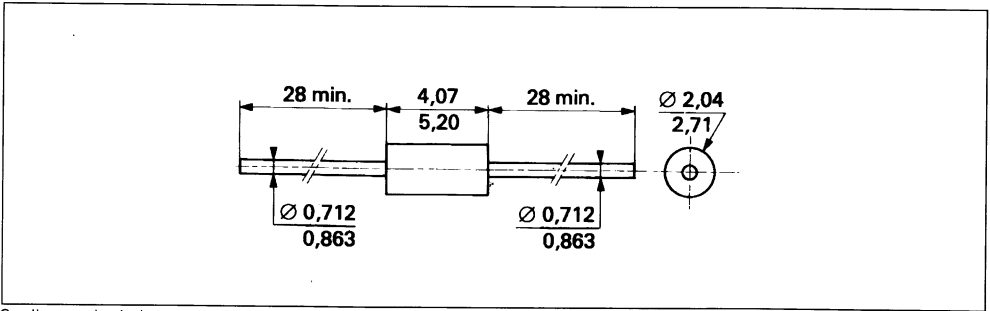


Fig.8 - Peak pulse power versus pulse duration (rectangular wave form).

**PACKAGE MECHANICAL DATA**

DO 41 Glass



Cooling method : by convection and conduction  
 Marking : clear, ring at cathode end.  
 Weight : 0.34g