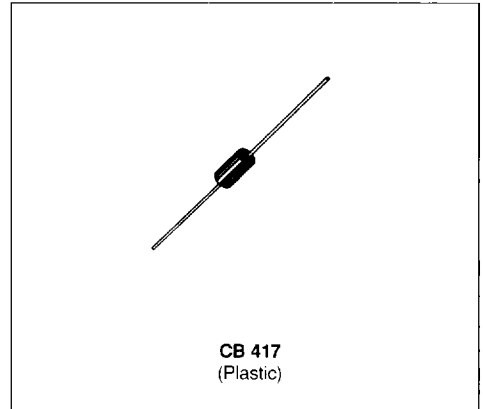




ZENER DIODES

- VOLTAGE RANGE : 3.3V TO 200V
- HERMETICALLY SEALED PLASTIC CASE
- HIGH SURGE CAPABILITY (up to 180W @ 8.3ms)



**DESCRIPTION**

5W silicon Zener diodes.

**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter	Value	Unit
$P_{tot}$	Power Dissipation*	$T_{amb} = 75^{\circ}C$ 5	W
$I_{ZM}$	Continuous Reverse Current*	$T_{amb} = 75^{\circ}C$ See page 2	A
$I_{ZSM}$	Peak Reverse Current	$T_{amb} = 25^{\circ}C$ See page 2	A
$T_{stg}$ $T_j$	Storage and Junction Temperature Range	- 65 to 175 - 65 to 200	$^{\circ}C$
$T_L$	Maximum Temperature for Soldering during 10s at 4mm from case	230	$^{\circ}C$

**THERMAL RESISTANCE**

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient*	25	$^{\circ}C/W$

\* On infinite heatsink with 10mm lead length.

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

Types	V <sub>ZT</sub> /I <sub>ZT</sub> * nom.	I <sub>ZT</sub> *	r <sub>ZT</sub> /I <sub>ZT</sub> * max.	r <sub>ZK</sub> /I <sub>ZK</sub> max.	I <sub>R</sub> / V <sub>R</sub>		-V <sub>Z</sub> typ.	I <sub>ZM</sub> max.	ΔV <sub>Z</sub> max.	I <sub>ZSM</sub> max.
	(V) (1)	(mA) (1)	(Ω) (1)	1.0mA (Ω)	(μA)	(V)				
1N 5333 B	3.3	380	3.0	400	300	1.0	-6	1440	0.85	22.2
1N 5334 B	3.6	350	2.5	500	150	1.0	-5.5	1320	0.80	20.4
1N 5335 B	3.9	320	2.0	500	50	1.0	-5	1220	0.54	18.8
1N 5336 B	4.3	290	2.0	500	10	1.0	-4	1100	0.49	17.0
1N 5337 B	4.7	260	2.0	450	5.0	1.0	-2	1010	0.44	15.6
P 1N 5338 B	5.1	240	1.5	400	1.0	1.0	1	930	0.39	14.4
P 1N 5339 B	5.6	220	1.0	400	1.0	2.0	2.5	865	0.25	13.1
1N 5340 B	6.0	200	1.0	300	1.0	3.0	2.8	790	0.19	12.2
P 1N 5341 B	6.2	200	1.0	200	1.0	3.0	3.2	765	0.10	11.8
P 1N 5342 B	6.8	175	1.0	200	10	5.2	4	700	0.15	10.8
1N 5343 B	7.5	175	1.5	200	10	5.7	4.5	630	0.15	9.8
1N 5344 B	8.2	150	1.5	200	10	6.2	4.8	580	0.20	8.9
1N 5345 B	8.7	150	2.0	200	10	6.6	4.9	545	0.20	8.4
1N 5346 B	9.1	150	2.0	150	7.5	6.9	5.1	520	0.22	8.1
1N 5347 B	10	125	2.0	125	5.0	7.6	5.5	475	0.22	7.3
1N 5348 B	11	125	2.5	125	5.0	8.4	6	430	0.25	11.0
P 1N 5349 B	12	100	2.5	125	2.0	9.1	6.5	395	0.25	10.1
1N 5350 B	13	100	2.5	100	1.0	9.9	6.5	365	0.25	9.3
1N 5351 B	14	100	2.5	75	1.0	10.6	7	340	0.25	8.6
P 1N 5352 B	15	75	2.5	75	1.0	11.5	7	315	0.25	8.1
P 1N 5353 B	16	75	2.5	75	1.0	12.2	7	295	0.30	7.6
1N 5354 B	17	70	2.5	75	0.5	12.9	7	280	0.35	7.1
P 1N 5355 B	18	65	2.5	75	0.5	13.7	7.5	264	0.40	6.7
1N 5356 B	19	65	3.0	75	0.5	14.4	7.5	250	0.40	6.4
1N 5357 B	20	65	3.0	75	0.5	15.2	7.5	237	0.40	6.0
P 1N 5358 B	22	50	3.5	75	0.5	16.7	8	216	0.45	5.5
P 1N 5359 B	24	50	3.5	100	0.5	18.2	8	198	0.55	5.0
1N 5360 B	25	50	4.0	110	0.5	19.0	8	190	0.55	4.8
P 1N 5361 B	27	50	5.0	120	0.5	20.6	8.5	176	0.60	4.5
1N 5362 B	28	50	6.0	130	0.5	21.2	8.5	170	0.60	4.3
P 1N 5363 B	30	40	8.0	140	0.5	22.8	8.5	158	0.60	4.0
1N 5364 B	33	40	10	150	0.5	25.1	8.5	144	0.60	3.7
P 1N 5365 B	36	30	11	160	0.5	27.4	9	132	0.65	3.4
1N 5366 B	39	30	14	170	0.5	29.7	9	122	0.65	3.1
1N 5367 B	43	30	20	190	0.5	32.7	9	110	0.70	2.8
1N 5368 B	47	25	25	210	0.5	35.8	9	100	0.80	2.6
1N 5369 B	51	25	27	230	0.5	38.8	9	93	0.90	2.4
1N 5370 B	56	20	35	280	0.5	42.6	9	86	1.00	2.2
1N 5371 B	60	20	40	350	0.5	45.5	9	79	1.20	2.0
P 1N 5372 B	62	20	42	400	0.5	47.1	9	76	1.35	1.9
1N 5373 B	68	20	44	500	0.5	51.7	9	70	1.50	1.8
1N 5374 B	75	20	45	620	0.5	56.0	9	63	1.60	1.6
1N 5375 B	82	15	65	720	0.5	62.2	9	58	1.80	1.5
1N 5376 B	87	15	75	760	0.5	66.0	9	54.5	2.00	1.4
1N 5377 B	91	15	75	760	0.5	69.2	9	52.5	2.20	1.3
P 1N 5378 B	100	12	90	800	0.5	76.0	9.5	47.5	2.50	1.2
1N 5379 B	110	12	125	1000	0.5	83.6	9.5	43	2.50	1.1
1N 5380 B	120	10	170	1150	0.5	91.2	9.5	39.5	2.50	1.0
1N 5381 B	130	10	190	1250	0.5	98.8	9.5	36.5	2.50	0.93
1N 5382 B	140	8.0	230	1500	0.5	106	9.5	34	2.50	0.86

(1) Pulse test: t<sub>p</sub> ≤ 50ms δ < 2%

(2) On infinite heatsink; d = 10mm

(3) Measured between 10% and 50% of I<sub>ZM</sub>.

(4) Rectangular waveform (t<sub>p</sub> = 10ms).

Tolerance on nominal V<sub>ZT</sub>: ± 5%.

P: Preferred voltages.

Forward voltage drop: V<sub>F</sub> ≤ 1.2V (T<sub>amb</sub> = 25 °C, I<sub>F</sub> = 1A)

**ELECTRICAL CHARACTERISTICS** (continued)

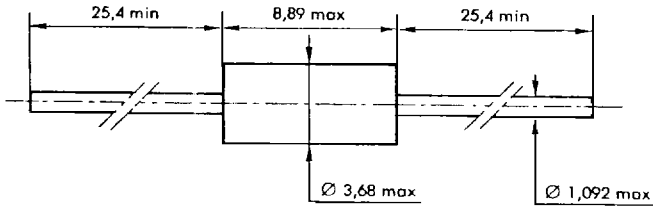
Types	$V_{ZT}/I_{ZT}^*$	$I_{ZT}^*$	$r_{ZT}/I_{ZT}^*$	$r_{ZK}/I_{ZK}$	$I_R / V_R$		$\alpha$ -VZ	$I_{ZM}$	$\Delta V_Z$	$I_{ZSM}$
	nom.	(mA)	max.	max.	max.	max.	typ.			
	(V)	(1)	( $\Omega$ )	1.0mA	( $\mu$ A)	(V)	( $10^{-4}/^{\circ}C$ )	$T_{amb} = 75^{\circ}C$	(V)	(A)
	(1)	(1)	(1)	( $\Omega$ )				(mA)	(3)	(4)
P 1N 5383 B	150	8.0	330	1500	0.5	114	9.5	31.6	3.00	0.81
1N 5384 B	160	8.0	350	1650	0.5	122	9.5	29.4	3.00	0.76
1N 5385 B	170	8.0	380	1750	0.5	129	9.5	28	3.00	0.71
P 1N 5386 B	180	5.0	430	1750	0.5	137	9.5	26.4	4.00	0.67
1N 5387 B	190	5.0	450	1850	0.5	144	9.5	25	5.00	0.64
P 1N 5388 B	200	5.0	480	1850	0.5	152	10	23.6	5.00	0.60

- (1) Pulse test :  $t_p \leq 50ms$   $\delta < 2\%$
- (2) On infinite heatsink :  $d = 10mm$
- (3) Measured between 10% and 50% of  $I_{ZM}$ .
- (4) Rectangular waveform ( $t_2 = 10ms$ ).

Tolerance on nominal  $V_{ZT} : \pm 5\%$ .  
**P** : Preferred voltages.  
 Forward voltage drop :  $V_F \leq 1.2V$  ( $T_{amb} = 25^{\circ}C$ ,  $I_F = 1A$ )

**PACKAGE MECHANICAL DATA**

CB-417 Plastic



Cooling method : by convection (method A)  
 Marking : clear ring at cathode end.  
 Weight : 0.6g

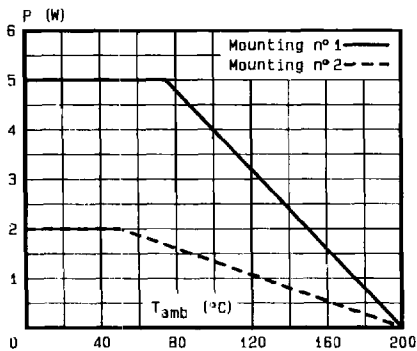


Fig.1 - Power dissipation versus ambient temperature.

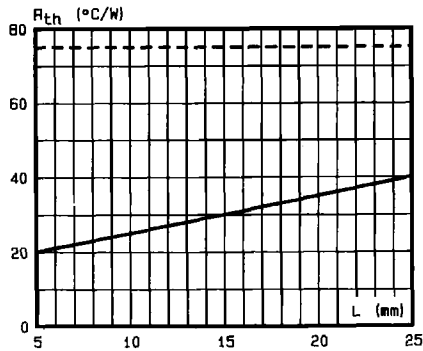


Fig.2 - Thermal resistance versus lead length.

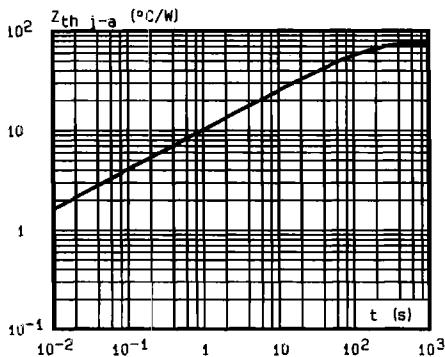


Fig.3 - Transient thermal impedance junction-ambient for mounting n°2 versus pulse duration (L = 10 mm).

Mounting n°1 INFINITE HEATSINK  
Mounting n°2 PRINTED CIRCUIT

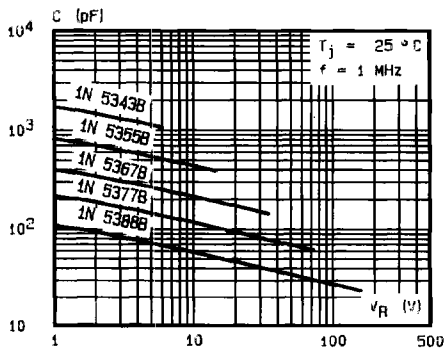
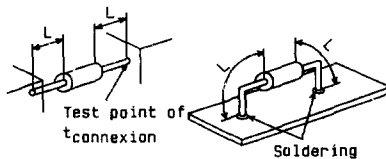


Fig.4 - Capacitance versus reverse applied voltage.

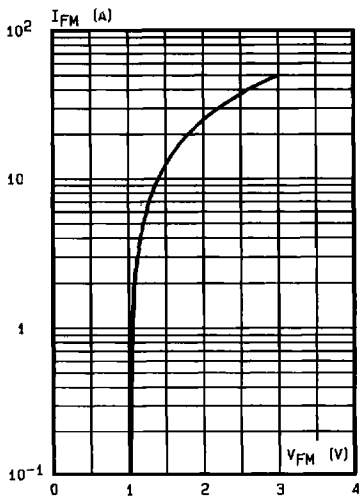


Fig.5 - Peak forward current versus peak forward voltage drop (typical values).

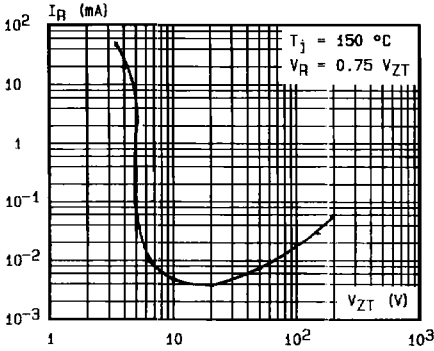


Fig.6 - Reverse current versus regulation voltage (typical values).

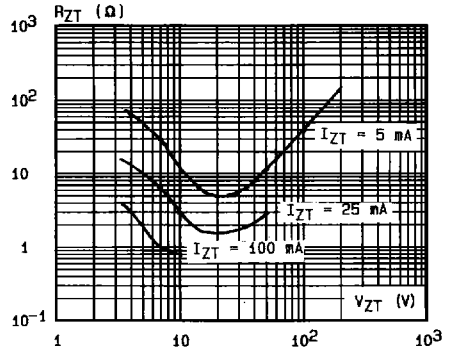


Fig.7 - Differential resistance versus regulation voltage (typical values).

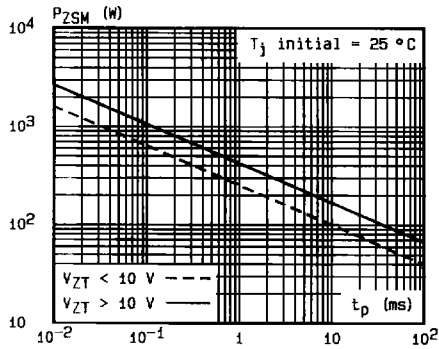


Fig.8 - Peak pulse power versus pulse duration (rectangular wave form) (maximum values).