

Silicon voltage regulator diodes

low power (cont.)

book 1 part 3

400mW ($T_{amb} = 60^{\circ}\text{C}$) $\pm 5\%$ voltage tolerance

Outline DO-7 Drawing reference D1

Type No. ‡BZY88 (cont)	Nom. Zener Voltage (V)	Measured at Test I _Z		Max. Slope Resistance (Ω)	Typ. Temp. Coefficient (mV/°C)	Test I _Z (mA)	Max. I _R at V _R (V)	
		Min. Voltage (V)	Max. Voltage (V)				(μA)	(V)
-C10	10	9.4	10.6	25	+7.0	5	2.5	7
-C11	11	10.4	11.6	25	+8.7	5	2.5	7
-C12	12	11.4	12.7	35	+9.0	5	2.5	8
-C13	13	12.4	14.1	35	+10.5	5	2.5	9
-C15	15	13.8	15.6	35	+12.5	5	2.5	10
-C16	16	15.3	17.1	40	+13	5	2.5	10
-C18	18	16.8	19.1	45	+15	5	2.5	13
-C20	20	18.8	21.2	50	+17	5	2.5	14
-C22	22	20.8	23.3	60	+19	5	2.5	15
-C24	24	22.7	25.9	75	+21	5	2.5	17
-C27	27	25.1	28.9	85	+23.5	5	2.5	19
-C30	30	28	32	95	+26	5	2.5	21
-C33	33	31	35	120	+28	5	2.5	23

‡also available to BS9305-N041

1N748A to 1N759A are also available

1.3W ($T_{amb} = 25^{\circ}\text{C}$) $\pm 5\%$ voltage tolerance

Outline DO-15 Drawing reference D3

Type No. §BZX61	Nom. Zener Voltage (V)	Measured at Test I _Z		Max. Slope Resistance (Ω)	Typ. Temp. Coefficient (%/°C)	Test I _Z (mA)	Max. I _R at V _R (V)	
		Min. Voltage (V)	Max. Voltage (V)				(μA)	(V)
-C7V5	7.5	7.0	7.9	5.0	+0.04	20	5	3
-C8V2	8.2	7.7	8.7	7.5	+0.04	20	5	3
-C9V1	9.1	8.5	9.6	8.0	+0.05	20	5	5
-C10	10	9.4	10.6	8.5	+0.05	20	5	7
-C11	11	10.4	11.6	9.0	+0.05	20	5	7
-C12	12	11.4	12.7	9.0	+0.05	20	5	8
-C13	13	12.4	14.1	10	+0.05	20	5	9
-C15	15	13.8	15.6	14	+0.06	20	5	10
-C16	16	15.3	17.1	16	+0.06	10	5	11
-C18	18	16.8	19.1	20	+0.06	10	5	13
-C20	20	18.8	21.2	22	+0.06	10	5	14
-C22	22	20.8	23.3	23	+0.06	10	5	15
-C24	24	22.7	25.9	25	+0.06	10	5	17
-C27	27	25.1	28.9	35	+0.06	10	5	19
-C30	30	28	32	40	+0.07	10	5	21
-C33	33	31	35	45	+0.07	10	5	23
-C36	36	34	38	50	+0.07	10	5	25
-C39	39	37	41	60	+0.07	5	5	27
-C43	43	40	46	70	+0.07	5	5	30
-C47	47	44	50	80	+0.08	5	5	33
-C51	51	48	54	95	+0.08	5	5	36
-C56	56	52	60	105	+0.08	5	5	39
-C62	62	58	66	110	+0.08	5	5	43
-C68	68	64	72	120	+0.08	5	5	48
-C75	75	70	79	145	+0.08	5	5	52
-C82	82	77	87	175	+0.09	5	5	55
-C91	91	85	96	200	+0.09	5	5	60
-C100	100	94	106	220	+0.09	5	5	66
-C110	110	104	116	260	+0.09	5	5	70
-C120	120	114	127	270	+0.10	5	5	80
-C130	130	124	141	300	+0.10	5	5	90
-C150	150	138	156	950	+0.11	2	5	100
-C160	160	153	171	1000	+0.11	2	5	110
-C180	180	168	191	1100	+0.11	2	5	120
-C200	200	188	212	1250	+0.11	2	5	140

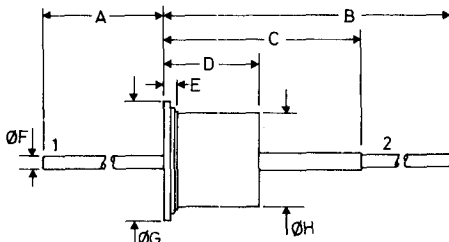
§Also available to BS9305-F047/F048

OUTLINES and DIMENSIONS (millimetres)

A

B.S.3934 SO-16

DO-1
DO-2
DO-3

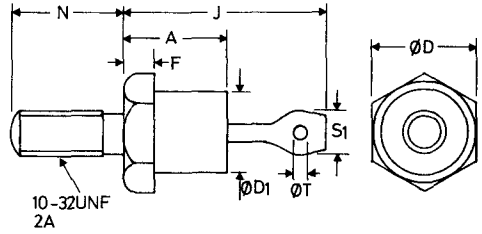


	1	2	A	B	C	D	E	ØF	ØG	ØH
	min.	max.	min.	max.	min.	max.	min.	max.	max.	max.
A1	a	k	35	51	17	7.7	1.6	1.1	9.6	7.1
A2	k	a	35	49	17	8.5	1.9	1.1	9.7	7.1
A3	k	a	35	51	17	7.7	1.6	1.1	9.6	7.1

B

B.S.3934 SO-10

DO-4



A 10.3 max.
ØD 11.1 max.
ØD1 9.3 max.
F 3.2

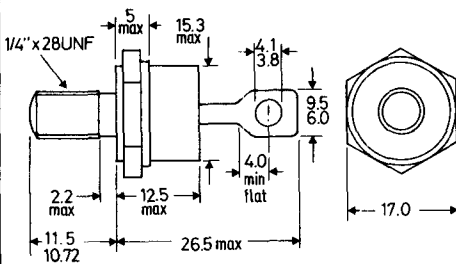
J 20.3 max.
N 11.5 max.
S1 4.8 max.
ØT 1.6 min.

	Stud	Eyelet
B1	k	a
B2	a	k

C

B.S.3934 SO-13

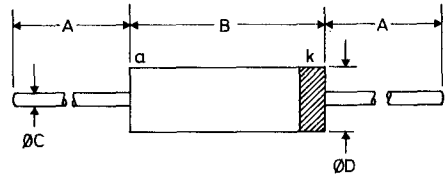
DO-5



	Stud	Eyelet
C1	k	a
C2	a	k

D

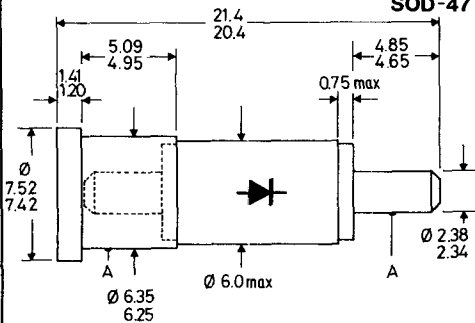
DO-7
DO-14
DO-15



		A	B	ØC	ØD
		min.	max.	nom.	max.
D1	DO-7	25.4	7.6	0.52	2.5
D2	DO-14	25.4	7.6	0.5	3.3
D3	DO-15	25.4	6.4	0.8	3.2

E

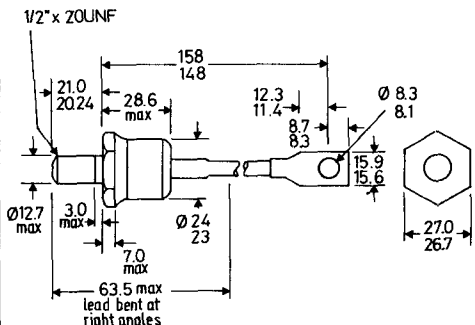
DO-22
SOD-47



A = concentricity tolerance = ± 0.20

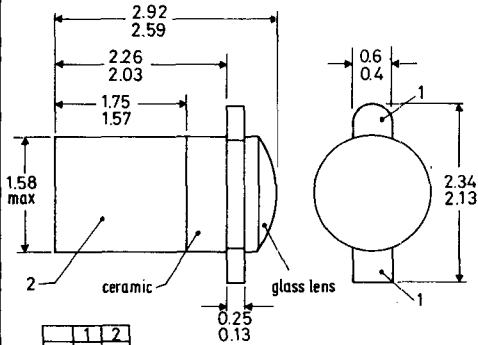
F

DO-30



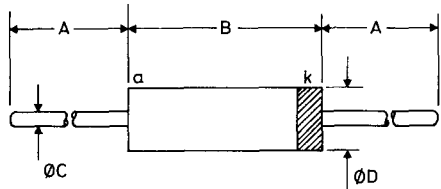
BZW86 Blue sleeve - anode to eyelet
BZW86R Red sleeve - anode to stud

These drawings give limited information for quick reference purposes. For equipment design more complete information should be obtained from individual data sheets in the Technical Handbook or from standard B.S. or JEDEC outline drawings.

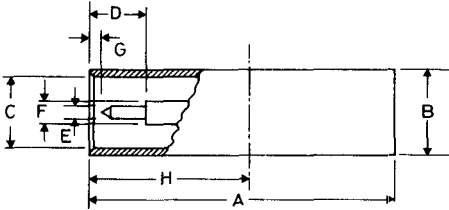
G**DO-31**

	1	2
G1	k	a
G2	e	c

For LED's the overall length = 3.60/2.97

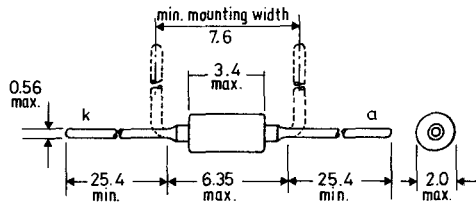
H**DO-35**

A	B	ØC	ØD
min.	max.	max.	max.
25.4	4.25	0.56	1.85

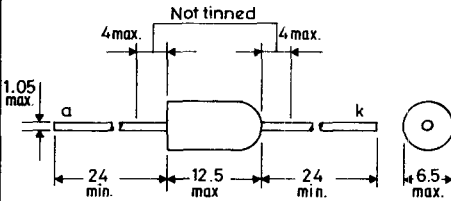
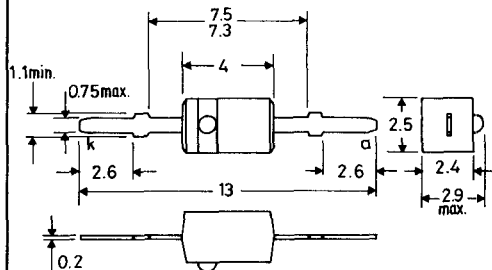
J**DO-37
SOD-49**

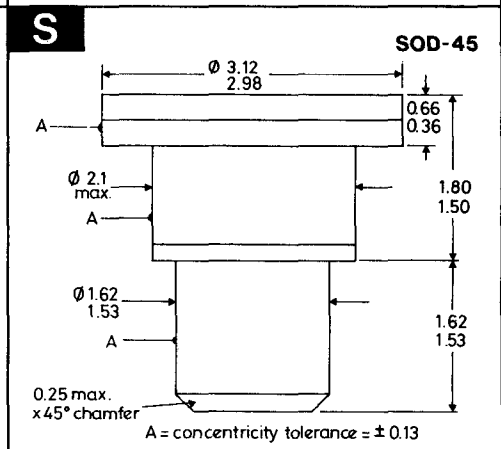
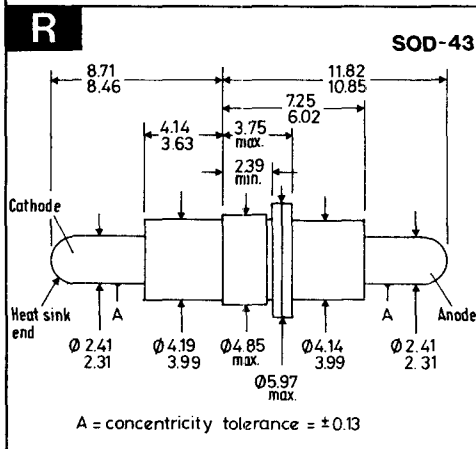
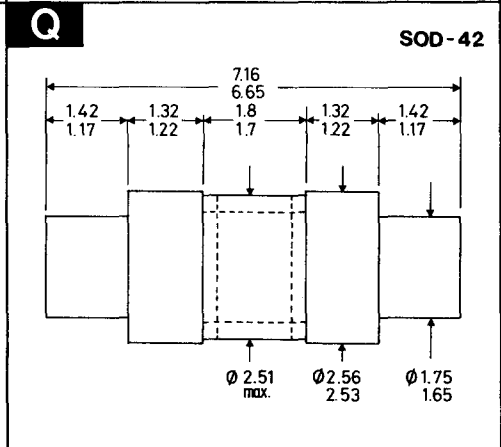
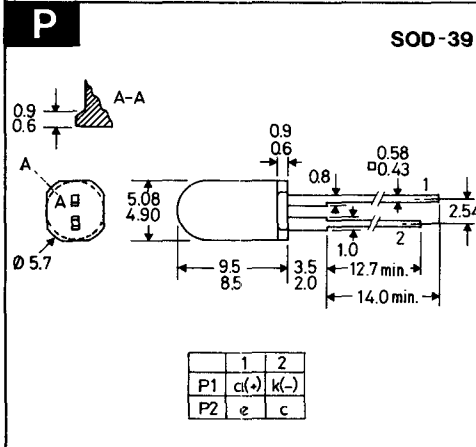
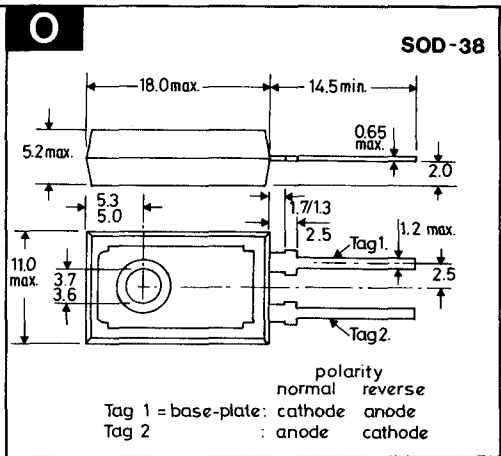
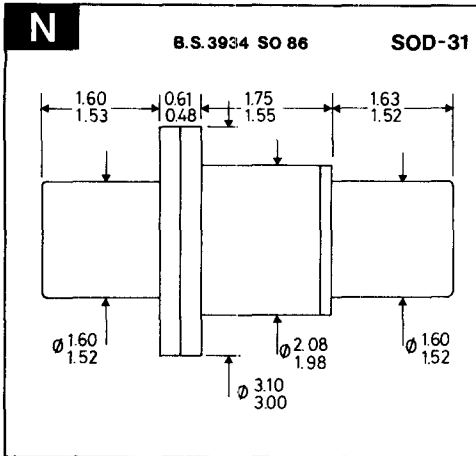
A	19.43/18.67	ØE	0.84/0.79
ØB*	5.59/5.49	ØF	1.57/1.52
ØC	4.80/4.72	G	0.71/0.15
D	3.73 min.	H	10.32 nom.

*These tolerances apply only over H

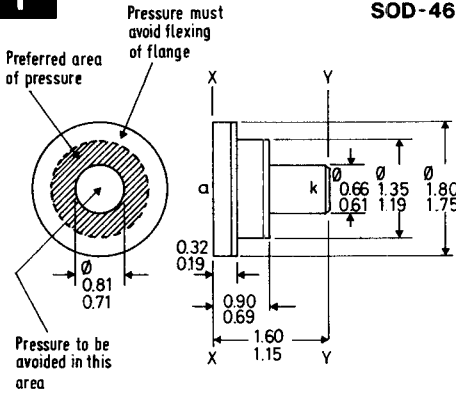
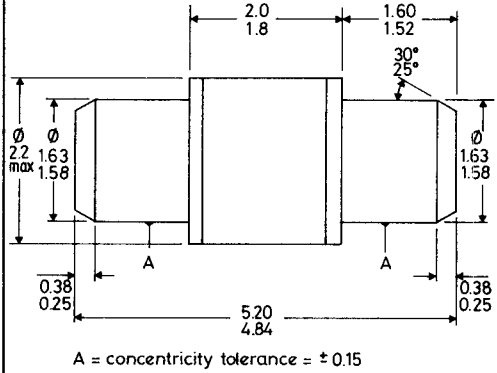
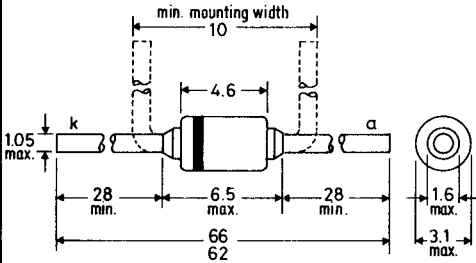
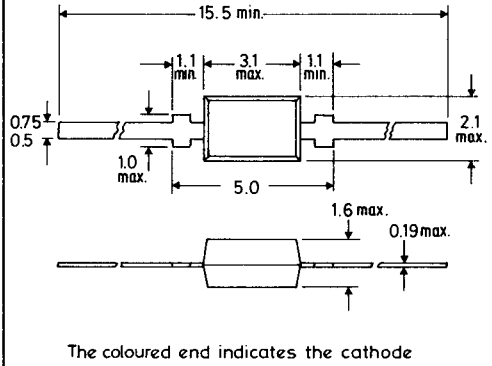
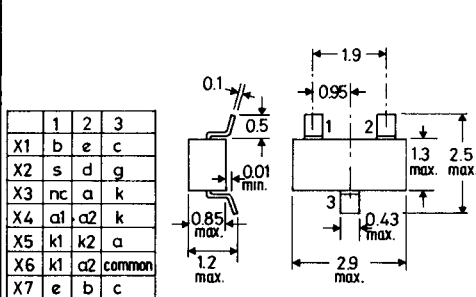
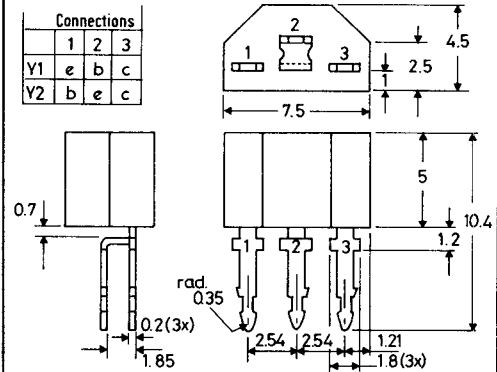
K**SOD-17**

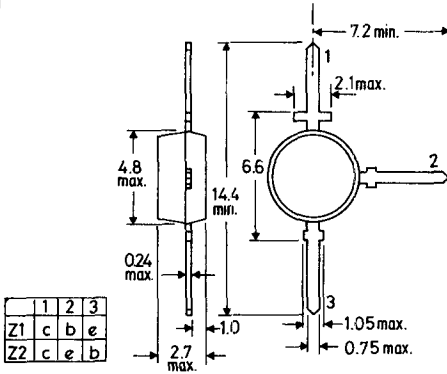
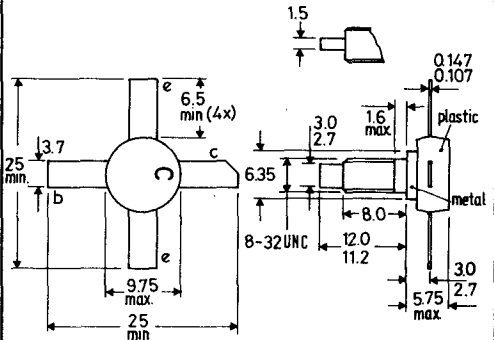
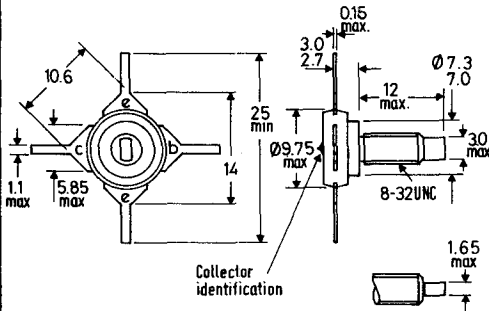
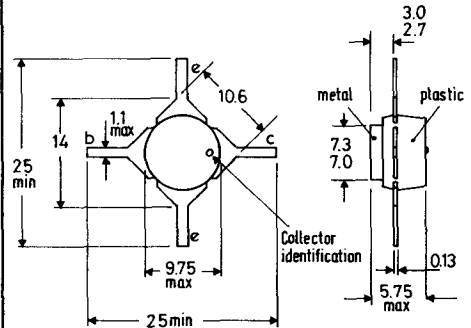
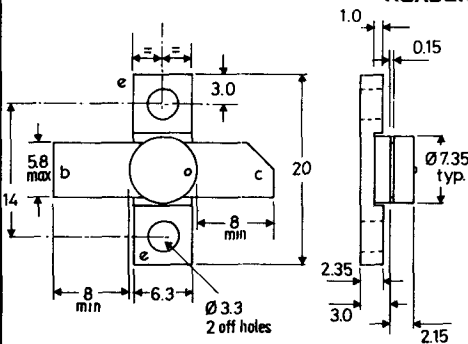
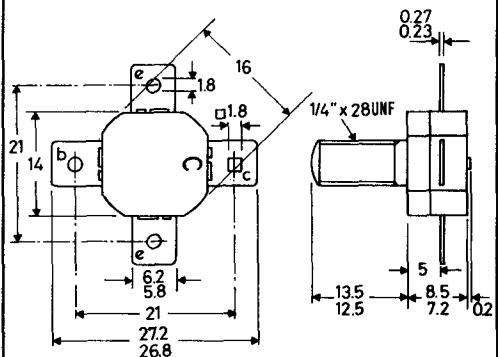
Cathode indicated by the broad band of colour code

L**SOD-18****M****SOD-23**

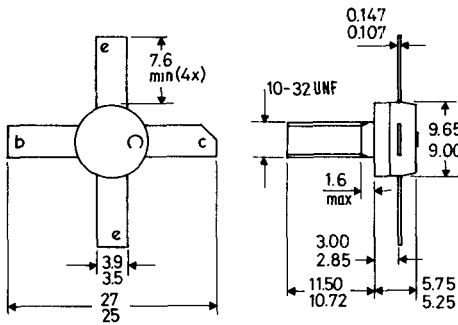
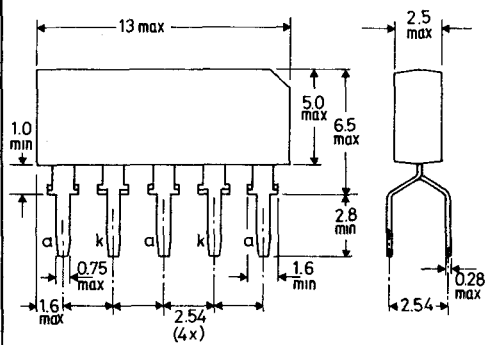
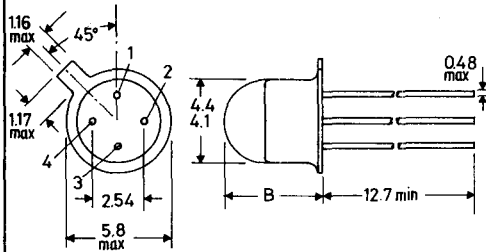


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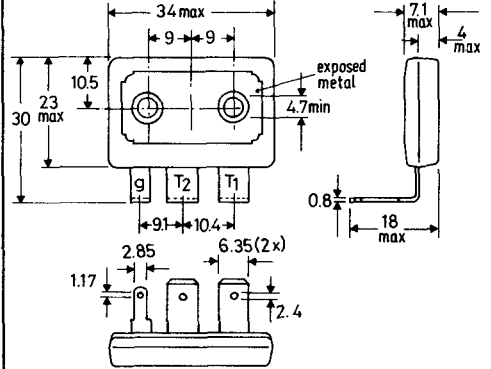
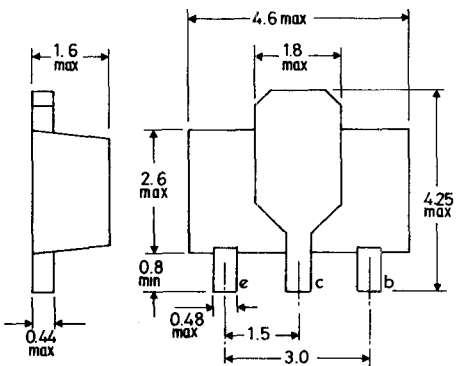
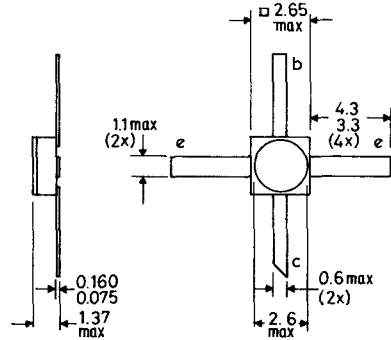
T**SOD-46****U****SOD-50****V****SOD-51****W****SOD-52****X****SOT-23****Y****SOT-25**

Z**SOT-37****AC****SOT-48/2****AD****SOT-48/3****AE****SOT-48/4****AF****SOT-48
HEADER****AG****SOT-55**

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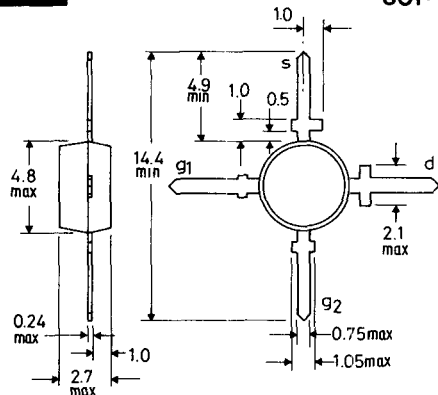
AH**SOT-56****AJ****SOT-60****AK****SOT-70**

	1	2	3	4	B max
AK1	a	—	k	—	5.08
AK2	e	b	c	—	4.5
AK3	Vp	IP	GND	OP	5.08

AL**SOT-80****AM****SOT-89****AN****SOT-100**

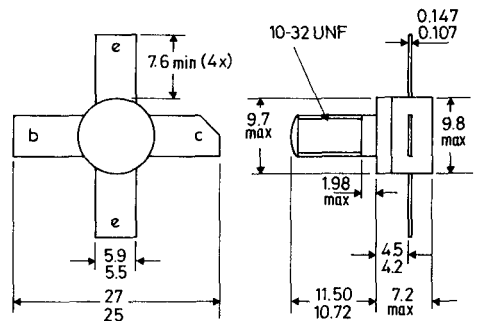
AO

SOT-103



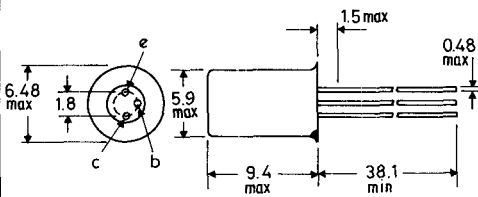
AP

SOT-105



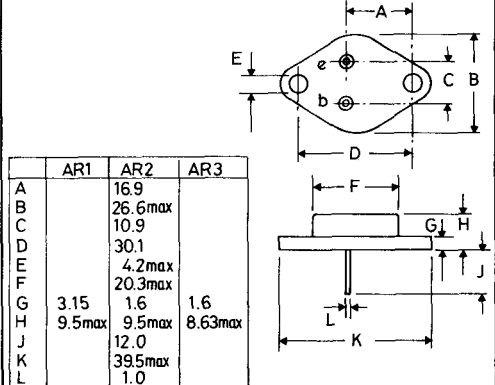
AQ

B.S.3934 SO-21/SB3-10 TO-1



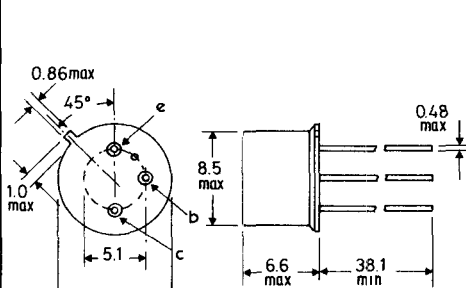
AR

B.S.3934 SO-5B/SB2-2 TO-3



AS

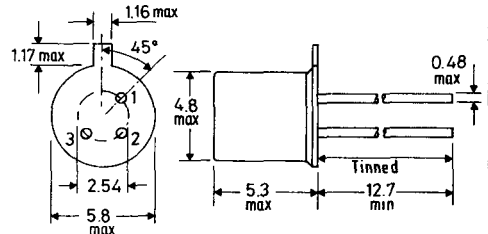
B.S.3934 SO-3/SB3-3B TO-5



AS1: collector connected to case
AS2: base connected to case

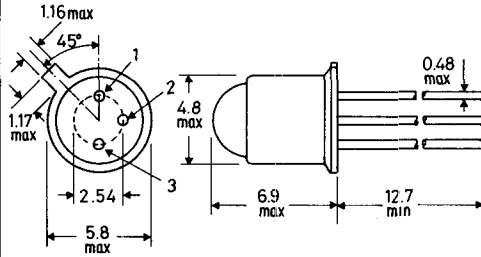
AT

B.S.3934 SO-12A/SB3-6A TO-18

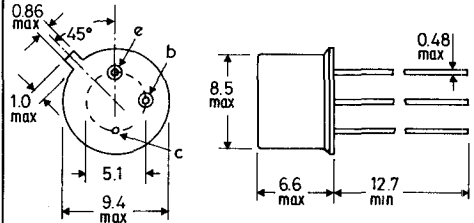


	1	2	3
AT1	e	b	c + env.
AT2	s	d	g + env.
AT3	d	g	s + env.
AT4	k	-	a
AT5	a	-	k
AT6	k	-	a

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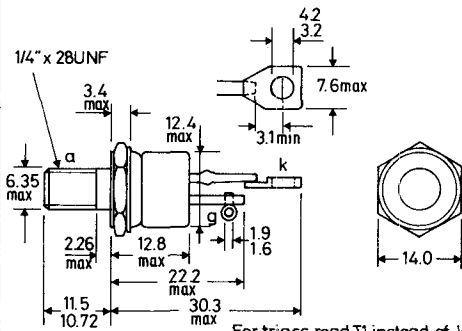
AU**TO-18**
(with lens)

	1	2	3
AU1	a	a	k
AU2	e	b	c+case
AU3	k	-	a

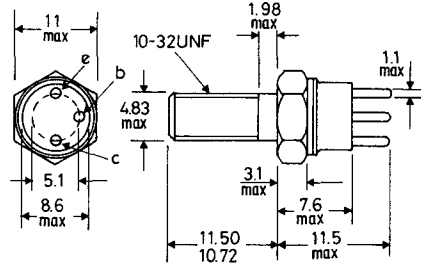
AV**B.S.3934 SO-3/SB3-3A TO-39**

AV1: b+case
 AV2: case isolated
 AV3: c+case
 AV4: e.cathode
 b.gate
 c.anode+case

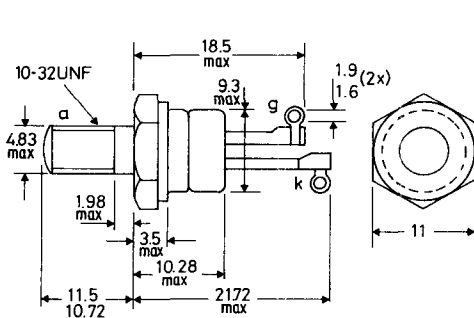
AV5: e.b. cell connections
 c. metal case
 AV6: red spot indicates
 +ve connection

AW**B.S.3932 SO-36 TO-48**

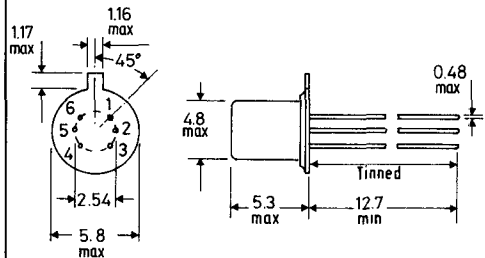
For triacs read T1 instead of k
 T2 instead of a

AX**TO-60**

Emitter connected to envelope

AY**B.S.3934 SO-35A TO-64**

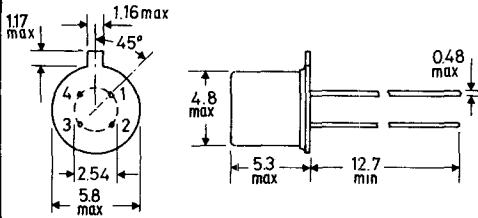
For triacs read T1 instead of k
 T2 instead of a

AZ**TO-71**

Pin	1	2	3	4	5	6
AZ1	e1	e2	c2	b2	b1	c1
AZ2	s1	d1	g1	s2	d2	g2

BA

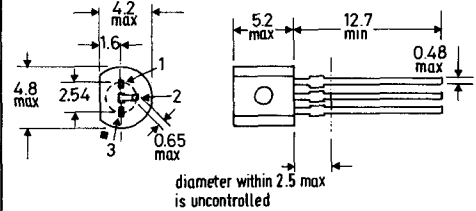
B.S.3934 SO-12A/SB4-3 TO-72



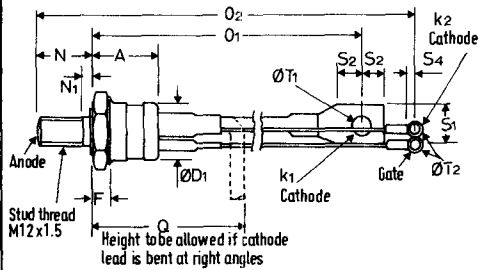
	1	2	3	4
BA1	b	e	c	s+envelope
BA2	e	b	c	s+envelope
BA3	s	d	g	screen+envelope
BA4	d	g	g	s+b+envelope
BA5	d	s	g	b+envelope
BA6	k	gk	ga	a

BBTO-92
variant

Pin	1	2	3
BB1	e	b	c
BB2	b	e	c
BB3	d	s	g
BB4	g	a	k
BB5	b	c	e

**BC**

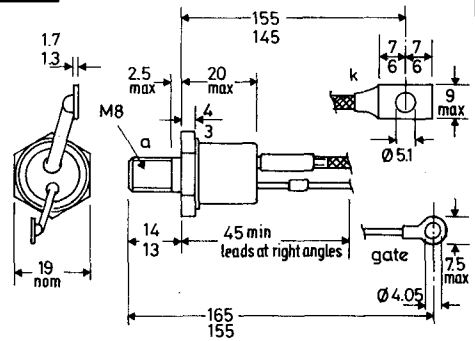
B.S.3934 SO-30C TO-94



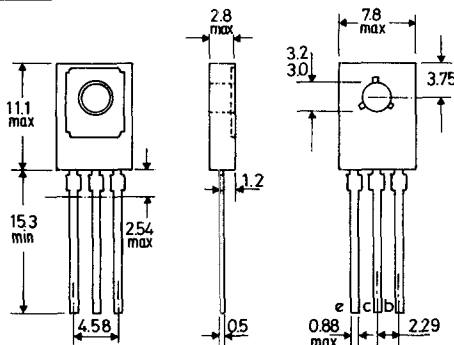
A	28.5max	O1	158 max	S4	3.8 min
ØD1	24.1max	O2	190max	ØT1	8.3max
F	8.9max	Q	63.5max	ØT2	4.2max
N	21.0max	S1	16.5max		
N1	3.0max	S2	9.6min		

BD

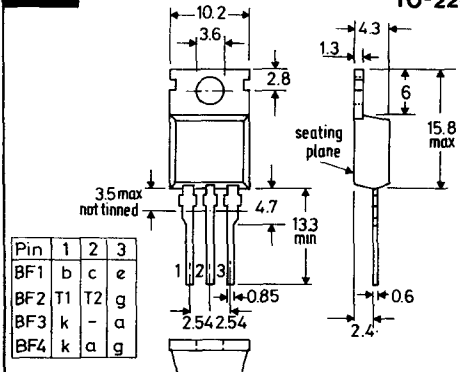
TO-103

For triacs read T1 instead of k
T2 instead of a**BE**

TO-126

**BF**

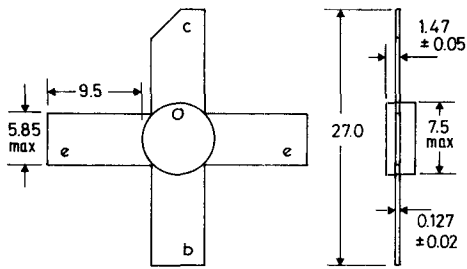
TO-220



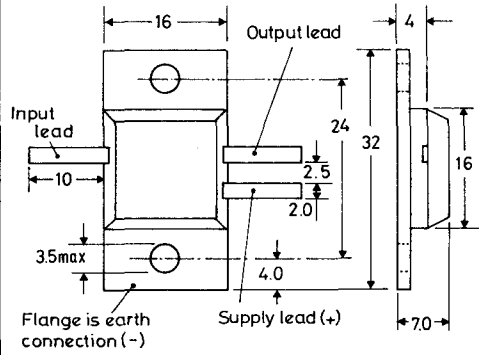
Pin	1	2	3
BF1	b	c	e
BF2	T1	T2	g
BF3	k	-	a
BF4	k	a	g

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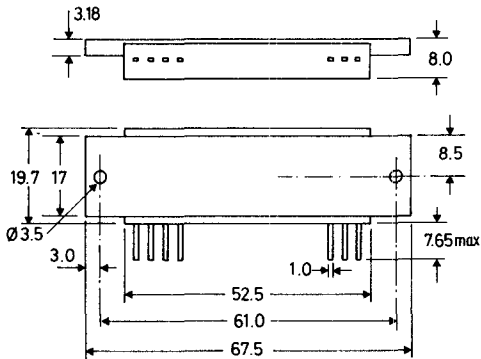
BG



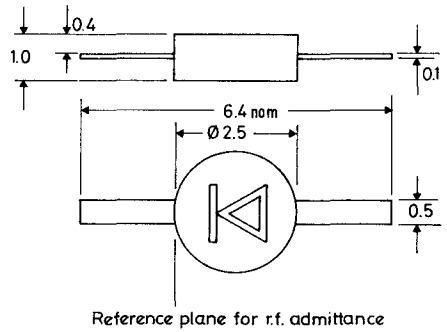
BH



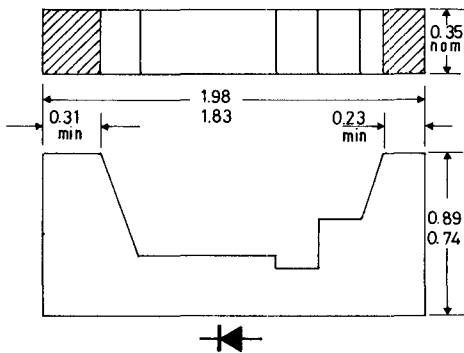
BJ



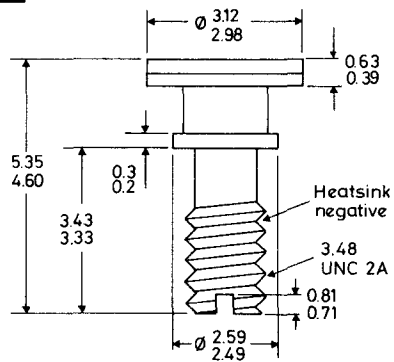
BK



BL



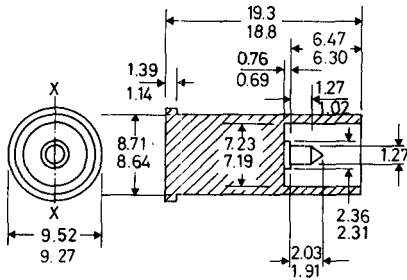
BM



BN

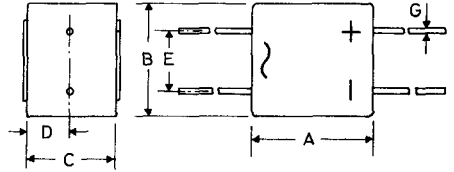
B.S.3934

SO-26

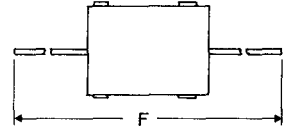


(All dimensions max.)

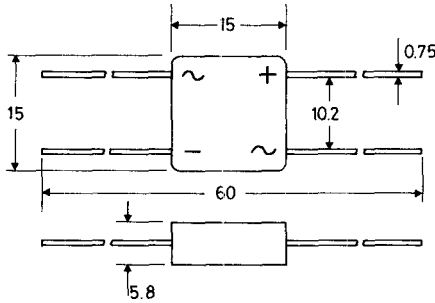
BO



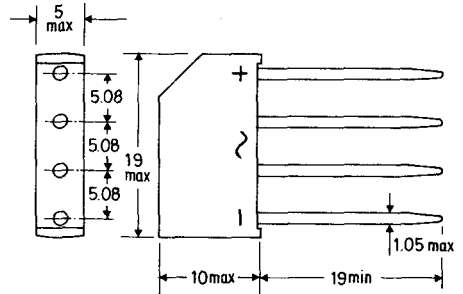
	BO1	BO2	BO3
A	12	20	12
B	10	19	10
C	8	15	8
D	4	7.5	4
E	5	10	5
F	58	60	48
G	0.75	1.0	1.1



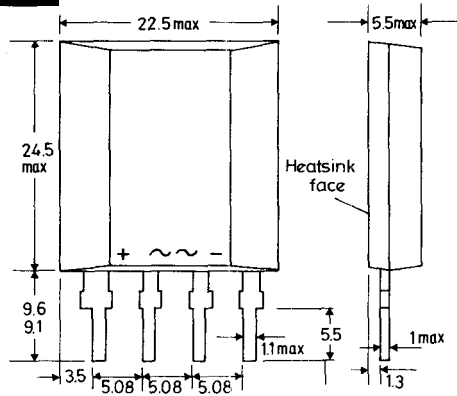
BP



BQ

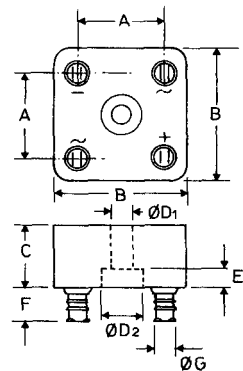


BR



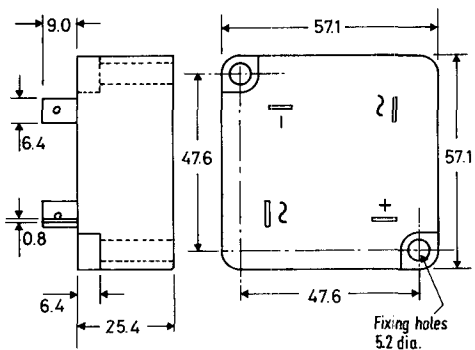
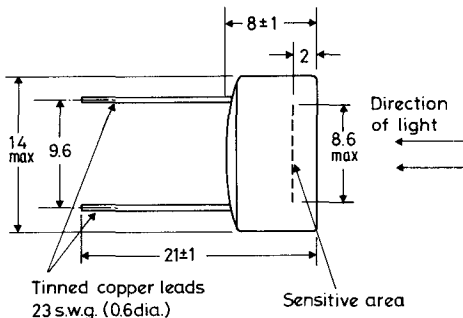
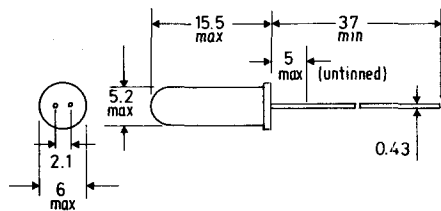
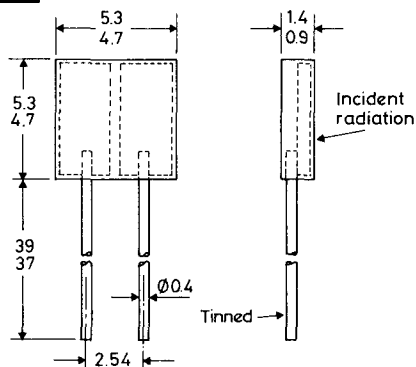
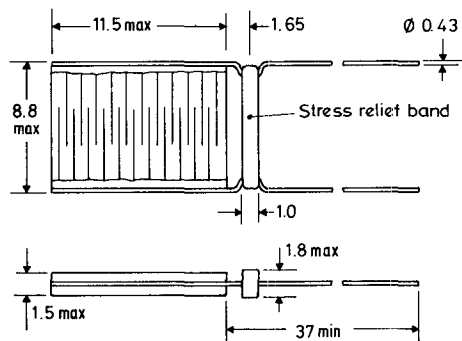
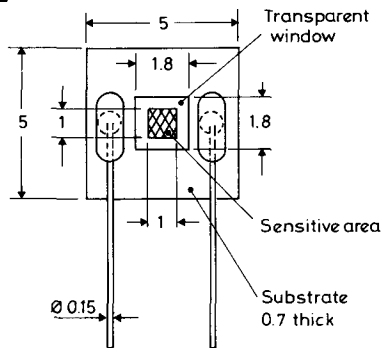
BS

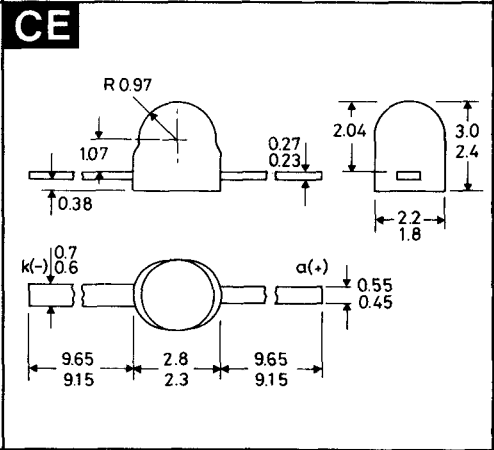
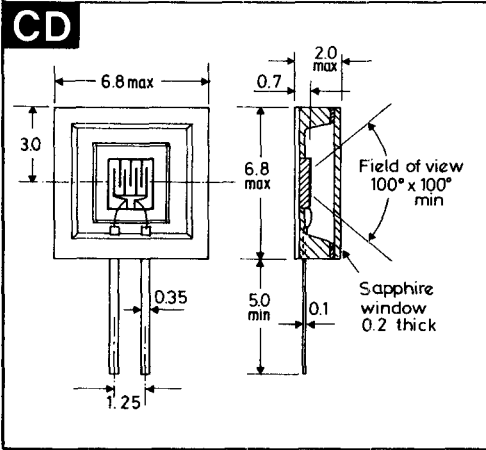
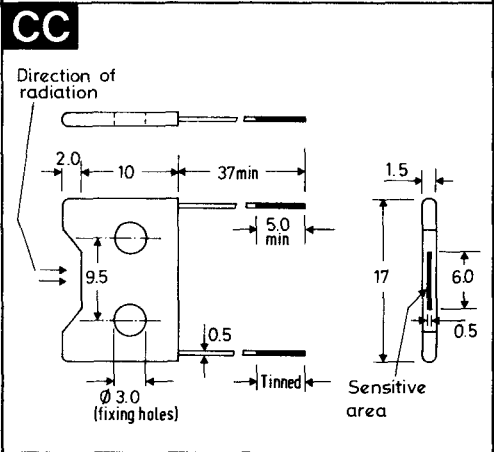
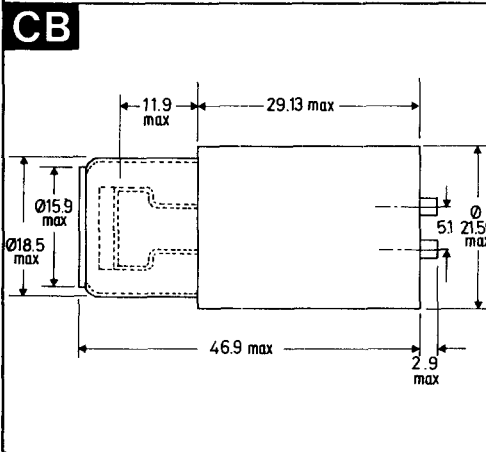
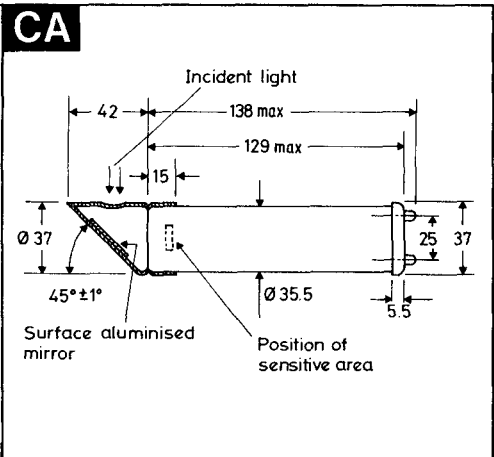
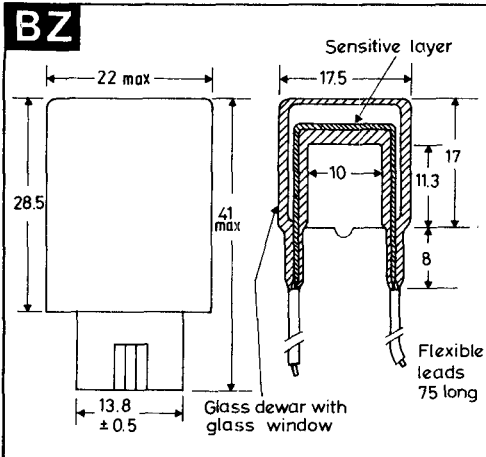
B.S.3934 SO-67



	BS1	BS2
	typ.	max.
A	23	21
B	35	34.6
C	17	15.2
ØD1	5	5.05
ØD2	11	11
E	5	3.7
F	9	9
ØG	4.8	4.8

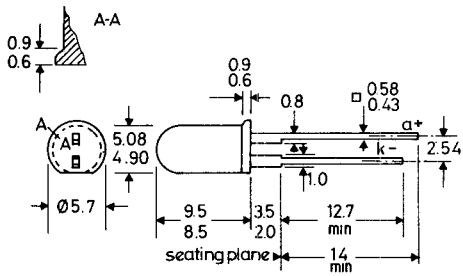
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BT**BU****BV****BW****BX****BY**

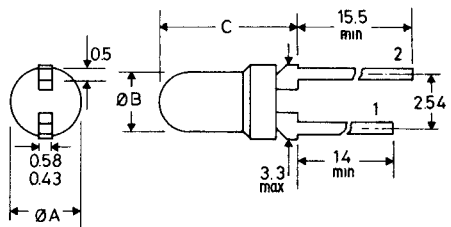


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CF

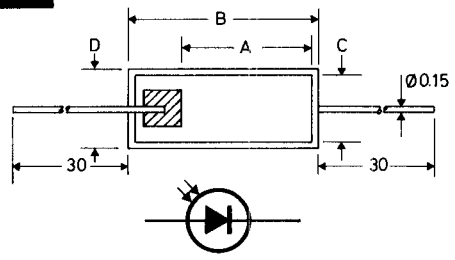


CG



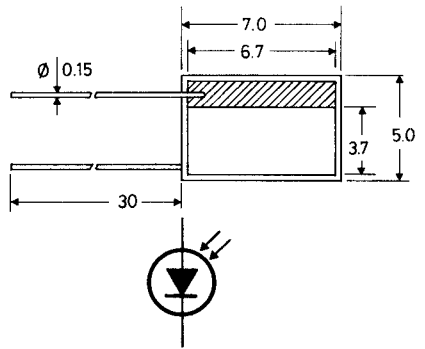
	1	2	$\varnothing A$	$\varnothing B$	C
CG1	k^-	a^+	3.0-3.17	2.4-2.6	5.8-6.3
CG2	a^+	k^-	3.0-3.17	2.4-2.6	5.8-6.3
CG3	k^-	a^+	3.3 max	2.65-3.17	4.8-6.3

CH

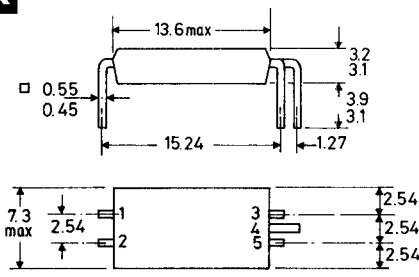


	CH1	CH2
A	2.2	3.5
B	3.35	4.55
C	0.95	1.85
D	1.25	2.15

CJ

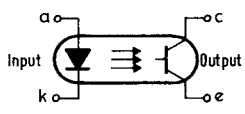
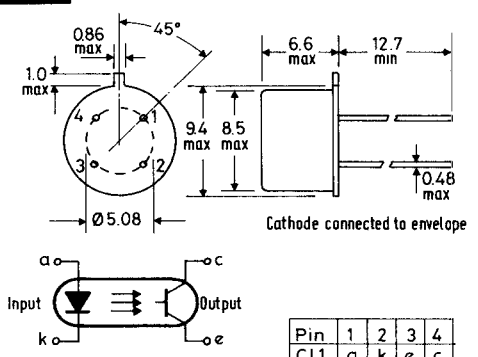


CK



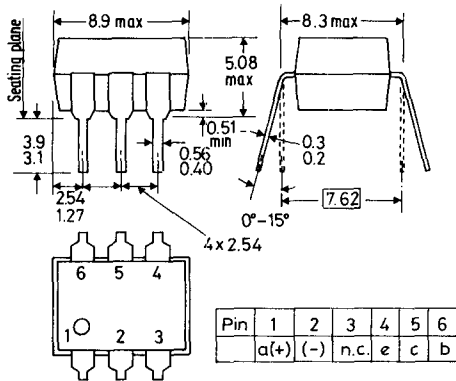
Pin	1	2	3	4	5
CK1	a	k	b	c	e
CK2	k	a	e	omitted	c

CL

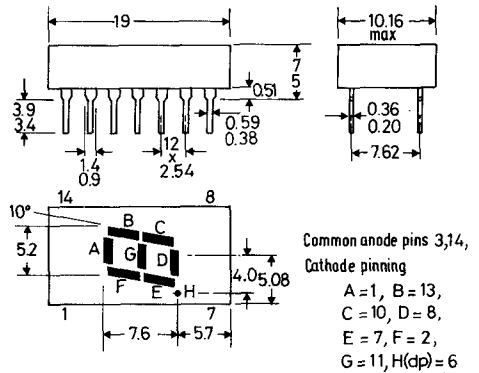


Pin	1	2	3	4
CL1	a	k	e	c
CL2	e	c	a	k

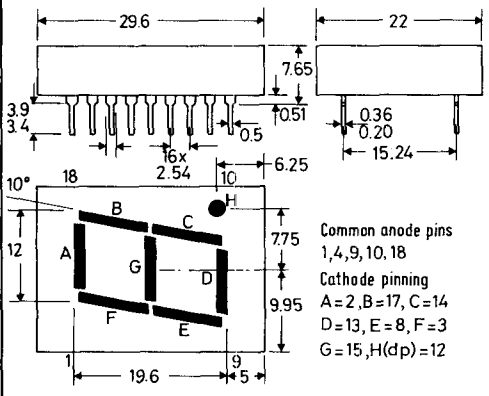
CM



CN



CO



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