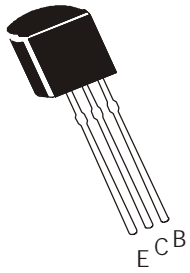


NPN SILICON PLANAR EPITAXIAL TRANSISTORS

CSC1684, CSC1685



**TO-92
Plastic Package**

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	CSC1684	CSC1685	UNITS
Collector Emitter Voltage	V_{CEO}	25	50	V
Collector Base Voltage	V_{CBO}	30	60	V
Emitter Base Voltage	V_{EBO}	7		V
Collector Current Peak	I_{CP}	200		mA
Collector Current	I_C	100		mA
Power Dissipation @ $T_a=25^\circ\text{C}$	P_C^*	400		mW
Junction Temperature	T_j	150		$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to +150		$^\circ\text{C}$

* $P_C=250\text{mW}$ /Potting type: $P_C=250\text{mW}$

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

DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Cut off Current	I_{CBO}	$V_{CB}=10\text{V}, I_E = 0$			1.0	μA
Collector Cut off Current	I_{CEO}	$V_{CE}=10\text{V}, I_B = 0$			100	μA
Collector Base Voltage	V_{CBO}	$I_C=10\mu\text{A}, I_E=0$	CSC1684	30		V
			CSC1685	60		V
Collector Emitter Voltage	V_{CEO}	$I_C=2\text{mA}, I_B=0$	CSC1684	25		V
			CSC1685	50		V
Emitter Base Voltage	V_{EBO}	$I_E=10\mu\text{A}, I_C=0$	7			V
DC Current Gain	h_{FE}^*	$V_{CE}=10\text{V}, I_C=2\text{mA}$	160		460	
	h_{FE}	$V_{CE}=2\text{V}, I_C=100\text{mA}$	90			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			0.5	V
Transition Frequency	f_T	$I_C=2\text{mA}, V_{CE}=10\text{V}$		150		MHz
Noise Figure	NV	$V_{CE}=10\text{V}, I_C=1\text{mA},$ $G_v=80\text{dB } R_g=100\text{k}\Omega,$ Function=FLAT		300		mV
Output Capacitance	C_{ob}	$I_E=0, V_{CB}=10\text{V}, f=1\text{MHz}$		3.5		pF

* h_{FE} Classifications

Q : 160 - 260

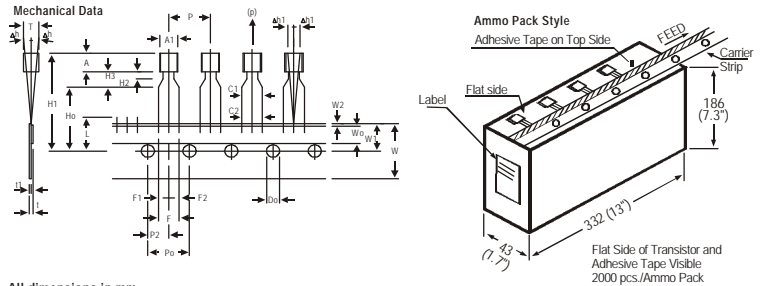
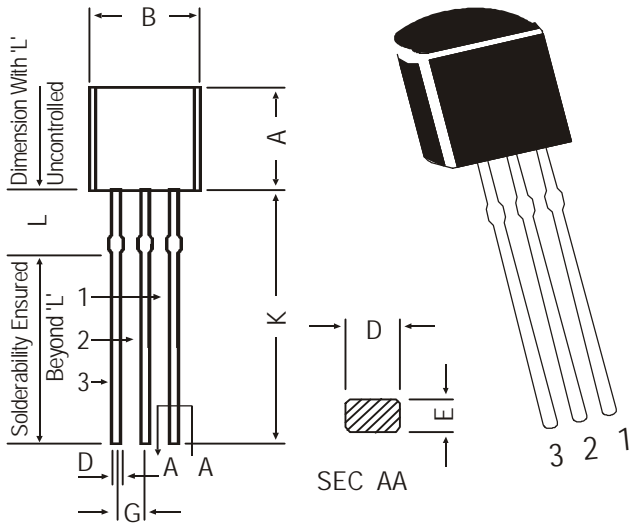
R : 200 - 340

S : 290 - 460

TO-92
Plastic Package

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack

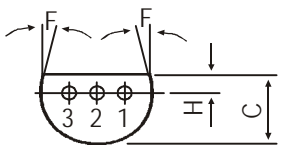


All dimensions in mm

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P	12.7			± 1.0	
FEED HOLE PITCH	Po	12.7			± 0.3	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2	6.35			± 0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F	5.08			+0.6 -0.2	
COMPONENT ALIGNMENT SIDE VIEW	Δh	0	1.0			AT TOP OF BODY
COMPONENT ALIGNMENT FRONT VIEW	Δh1	0	1.3			AT TOP OF BODY
TAPE WIDTH	W	18			± 0.5	
HOLD-DOWN TAPE WIDTH	Wo	6			± 0.2	
HOLE POSITION	W1	9			+0.7 -0.5	
HOLD-DOWN TAPE POSITION	W2	0.5			± 0.2	
LEAD WIRE CLINCH HEIGHT	Ho	16			± 0.5	
COMPONENT HEIGHT	H1		23.25			
LENGTH OF SNIPPED LEADS	L		11.0			
FEED HOLE DIAMETER	Do	4			± 0.2	
TOTAL TAPE THICKNESS	t		1.2			t1 0.3-0.6
LEAD - TO - LEAD DISTANCE	F1, F2	2.54			+0.4 -0.1	
STAND OFF	H2	0.45	1.45			
CLINCH HEIGHT	H3		3.0			
LEAD PARALLELISM	C1 - C2		0.22			
PULL - OUT FORCE	(P)	6N				

NOTES

- Maximum alignment deviation between leads will not to be greater than 0.2mm.
- Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
- Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
- There will be no more than three (3) consecutive missing components in a tape.
- A tape trailer, having at least three feed holes are provided after the last component in a tape.
- Splices should not interfere with the sprocket feed holes.



PIN CONFIGURATION

- BASE
- COLLECTOR
- EMITTER

DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—
L	1.982	2.082

All diminsions in mm.

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

Disclaimer

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