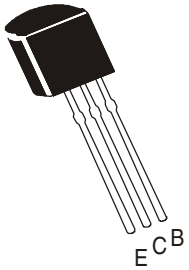
NPN SILICON PLANAR EPITAXIAL TRANSISTORS

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=25ºC	P_C*	400		mW
Junction Temperature	T_j	150		ºC
Storage Temperature Range	T_{stg}	- 55 to +150		ºC

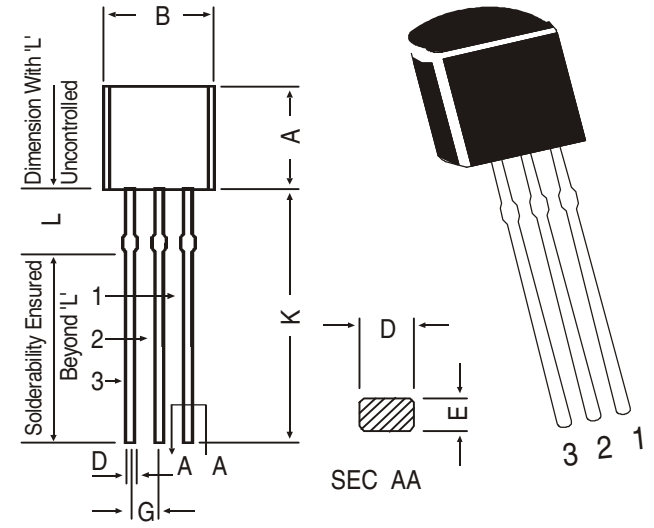
*P_C=250mW/Potting type: P_C=250mW

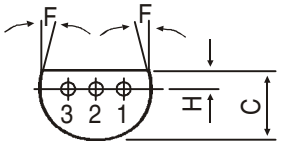
ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

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

*h_{FE} Classifications **Q : 160 - 260** **R : 200 - 340** **S : 290 - 460**

TO-92 Plastic Package



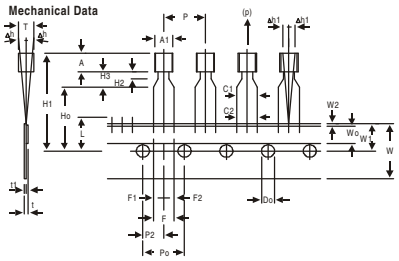


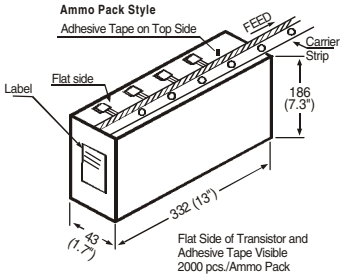
PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER

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.

TO-92 Transistors on Tape and Ammo Pack





All dimensions in mm

ITEM	SYMBOL	SPECIFICATION MIN.	NOM.	MAX.	TOL .	REMARKS
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	△h		0	1.0		AT TOP OF BODY
COMPONENT ALIGNMENT FRONT VIEW	△h1		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
1. Maximum alignment deviation between leads will not to be greater than 0.2mm.
2. Maximum non-cumulative variation between tape feed holes shall not exceed 1 mm in 20 pitches.
3. Holddown tape will not exceed beyond the edge(s) of carrier tape and there shall be no exposure of adhesive.
4. There will be no more than three (3) consecutive missing components in a tape.
5. A tape trailer, having at least three feed holes are provided after the last component in a tape.
6. Splices should not interfere with the sprocket feed holes.

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

TO-92
Plastic Package

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished in the Data Sheet and on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

CDIL strives for continuous improvement and reserves the right to change the specifications of its products without prior notice.

CDIL is a registered Trademark of
Continental Device India Limited
C-120 Naraina Industrial Area, New Delhi 110 028, India.
Telephone + 91-11-2579 6150, 5141 1112 Fax + 91-11-2579 5290, 5141 1119
email@cdil.com www.cdilsemi.com

CSC1684_1685Rev190302E