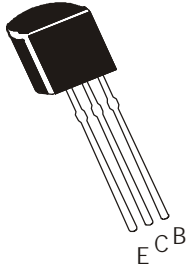


NPN EPITAXIAL PLANAR SILICON TRANSISTOR

CSC1815



TO-92
Plastic Package

Audio Frequency General Purpose and Driver Stage Amplifier Applications.
Complementary CSA1015

ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless specified otherwise)

DESCRIPTION	SYMBOL	VALUE	UNITS
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current Continuous	I_C	150	mA
Base Current	I_B	50	mA
Collector Power Dissipation	P_C	625	mW
Operating And Storage Junction Temperature Range	T_j, T_{stg}	-55 to +125	$^{\circ}\text{C}$

THERMAL RESISTANCE

Junction to case	$R_{th(j-c)}$	250	$^{\circ}\text{C/W}$
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ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless specified otherwise)

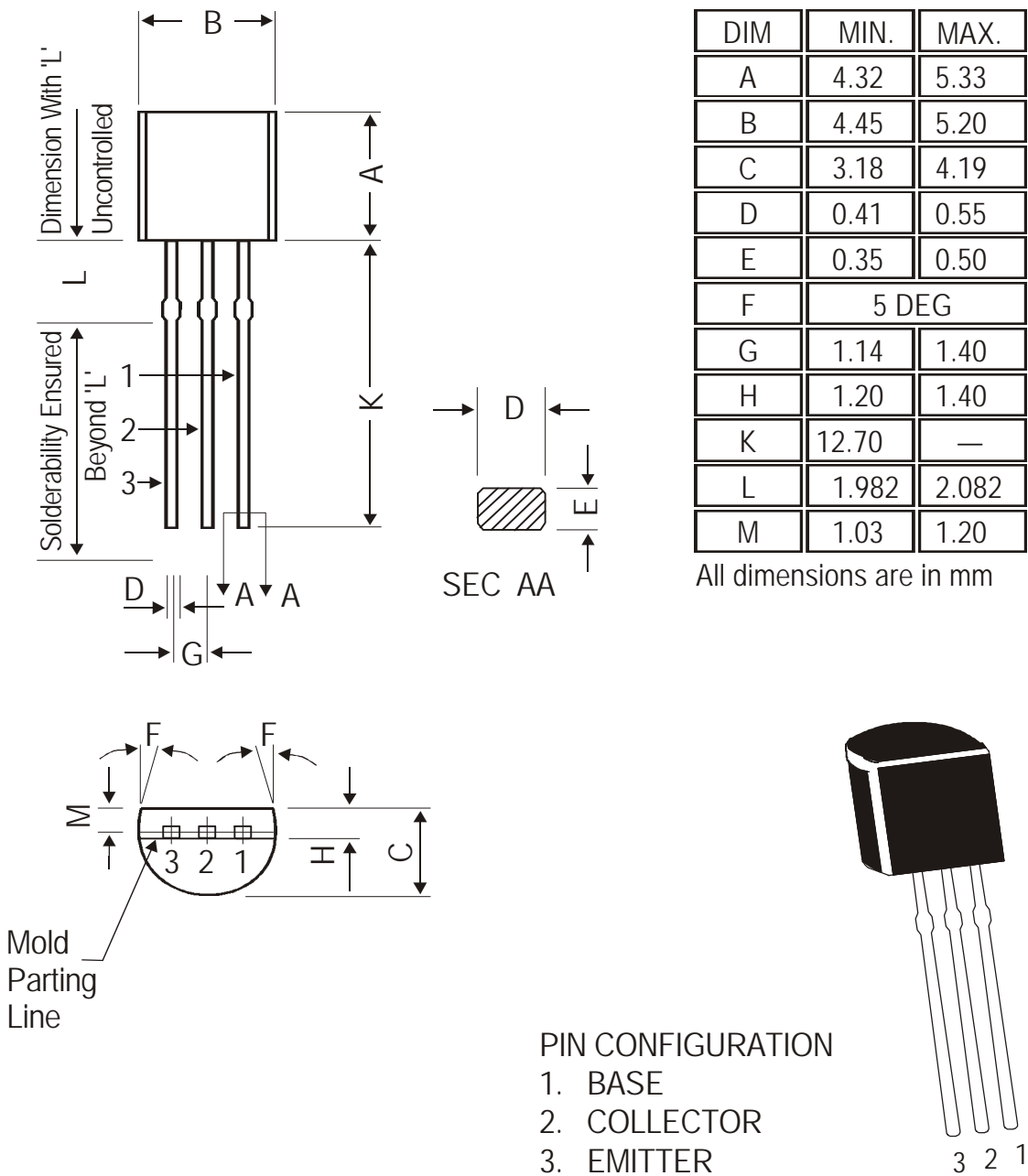
DESCRIPTION	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNITS
Collector Cut off Current	I_{CBO}	$V_{CB}=60\text{V}, I_E=0$			100	nA
Emitter Cut off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	nA
DC Current Gain	$*h_{FE}$	$I_C=2\text{mA}, V_{CE}=6\text{V}$	70		700	
	h_{FE}	$I_C=150\text{mA}, V_{CE}=6\text{V}$	25			
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			0.25	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100\text{mA}, I_B=10\text{mA}$			1.0	V

Dynamic Characteristics

Transition Frequency	ft	$V_{CE}=10\text{V}, I_C=1\text{mA}, f=100\text{MHz}$	80			MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$			3	pF
Base Spreading Resistance	rbb'	$V_{CB}=10\text{V}, I_E=1\text{mA}, f=30\text{MHz}$		50		Ω
Noise Figure	NF	$V_{CE}=6\text{V}, I_C=0.1\text{mA}, R_g=10\text{K}\Omega, f=1\text{KHz}$			10	dB
CLASSIFICATION	O	Y	GR	BL		
$*h_{FE}$	70 - 140	120 - 240	200 - 400	350 - 700		

CSC1815REV_3 281202D

TO-92 Plastic Package



The TO-92 Package, Tape and Ammo Pack Drawings are correct as on the date of issue/revision of this Data Sheet.

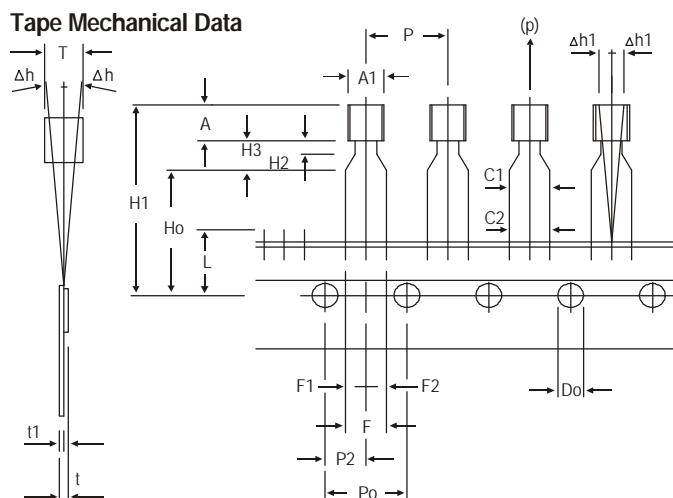
The currently valid dimensions and information, may please be confirmed from the TO-92 Drawing in the Packages and Packing Section of the Product Catalogue.

Packing Details

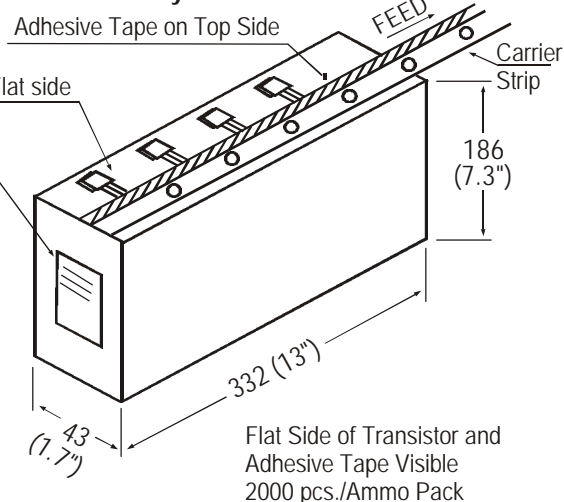
PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5K	17" x 15" x 13.5"	80K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2K	17" x 15" x 13.5"	32K	12.5 kgs

TO-92 Tape and Ammo Pack

Tape Mechanical Data



Ammo Pack Style



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		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
*1 FEED HOLE PITCH	Po		12.7		± 0.3
*2 FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		± 0.4
DISTANCE BETWEEN OUTER LEADS	F		5.08		+ 0.6 - 0.2
*3 COMPONENT ALIGNMENT SIDE VIEW	Δh		0	1.0	
*4 COMPONENT ALIGNMENT FRONT VIEW	Δh1		0	1.3	
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
*5 TOTAL TAPE THICKNESS	t			1.2	
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.

REMARKS

- *1 Cumulative pitch error 1.0 mm/20 pitch
 *2 To be measured at bottom of clinch
 *3 At top of body
 *4 At top of body
 *5 t1 0.3 – 0.6 mm

Disclaimer

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