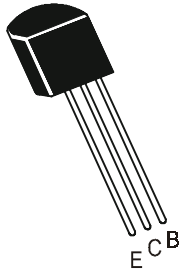


**NPN SILICON EPITAXIAL TRANSISTORS**

**CSC1213  
CSC1213A**



**TO-92  
Plastic Package**

**Low Frequency Amplifier.**

**ABSOLUTE MAXIMUM RATINGS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	CSC1213	CSC1213A	UNIT
Collector Emitter Voltage	$V_{CEO}$	35	50	V
Collector Base Voltage	$V_{CBO}$	35	50	V
Emitter Base Voltage	$V_{EBO}$		6	V
Collector Current	$I_C$	500		mA
Collector Power Dissipation	$P_C$	400		mW
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150		°C

**ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)**

DESCRIPTION	SYMBOL	MIN	TYP	MAX	UNIT
Collector Base Voltage	$V_{CBO}$ $I_C=10\mu A, I_E=0$				
		CSC1213	35		V
	CSC1213A	50		V	
Collector Emitter Voltage	$V_{CEO}$ $I_C=1mA, I_B=0$				
		CSC1213	35		V
	CSC1213A	50		V	
Emitter Base Voltage	$V_{EBO}$ $I_E=10\mu A, I_C=0$	4.0			V
Collector Cut off Current	$I_{CBO}$ $V_{CB}=20V, I_E=0$			500	nA
DC Current Gain	$h_{FE}^*$ $V_{CE}=3V, I_C=10mA$	60		320	
	$h_{FE}^{**}$ $V_{CE}=3V, I_C=500mA$	10			
Collector Emitter Saturation Voltage	$V_{CE(sat)}^{**}$ $I_C=150mA, I_B=15mA$			0.6	V
Base Emitter on Voltage	$V_{BE(on)}$ $I_C=10mA, V_{CE}=3V$		0.64		V

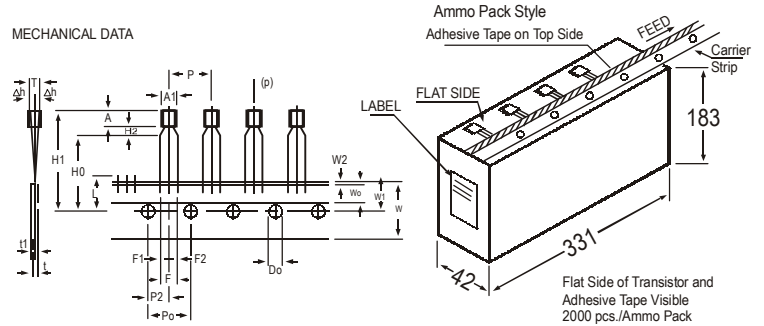
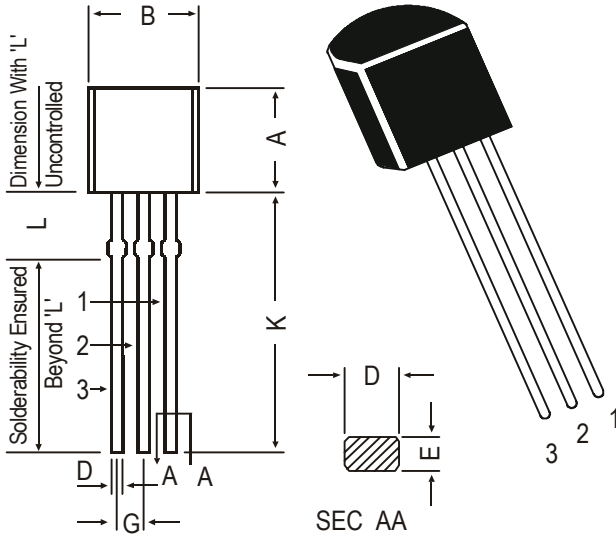
**\* hFE CLASSIFICATION**

CSC1213 & CSC1213A	B	C	D
	60-120	100-200	160-320

**\*\* Pulse Test**

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack



All dimensions in mm unless specified otherwise

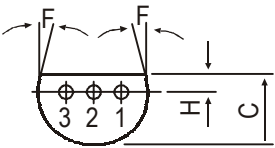
ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	Δh		0	1		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	
CLINCH HEIGHT	H2			3		
PULL - OUT FORCE	(P)	6N				

NOTES

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.

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 dimensions in mm.



PIN CONFIGURATION

1. BASE
2. COLLECTOR
3. EMITTER

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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