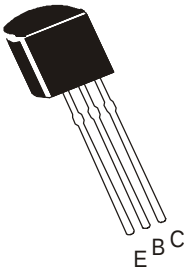
NPN SILICON PLANAR EPITAXIAL TRANSISTORS

CN454 / CN455



TO-92
Plastic Package

General Purpose Transistors designed for Small and Medium Signal Amplification from D.C to Radio Frequencies

ABSOLUTE MAXIMUM RATINGS

DESCRIPTION	SYMBOL	CN454	CN455	UNITS
Collector Base Voltage	V_{CBO}	140	160	V
Collector Emitter Voltage	V_{CEO}	120	140	V
Emitter Base Voltage	V_{EBO}	5		V
Peak Pulse Current	I_{CM}	2		A
Collector Current Continuous	I_C	1		A
Base Current	I_B	200		mA
Power Dissipation @ T_a=25ºC	P_D	0.9		W
Derate Above 25ºC		7.2		mW/ºC
Power Dissipation @ T_a=25ºC	**P_D	1.1		W
Power Dissipation @ T_C=25ºC	P_D	2.2		W
Operating and Storage Junction Temperature Range	T_j, T_{stg}	- 65 to +150		ºC

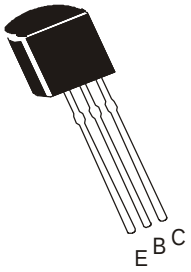
Thermal Resistance

Junction to Ambient	$R_{th\ (j\text{-}a)\ 1}$	138.8	ºC/W
Junction to Ambient	$R_{th\ (j\text{-}a)\ 2+}$	113.6	ºC/W
Junction to Case	$R_{th\ (j\text{-}c)}$	56.8	ºC/W

*** Consult safe operating area graph for conditions.**
****Transistors mounted on printed circuit board. Lead Length 4mm, mounting pad for collector lead min 10mm x 10 mm, copper**
2+ Device mounted on P.C.B with copper equal to 1sq.inch. Minimum

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	CN454	CN455	UNITS
Collector Cut Off Current	I_{CBO}	V_{CB}=120V, I_E = 0	<100		nA
		V_{CB}=140V, I_E = 0		<100	nA
Emitter Cut Off Current	I_{EBO}	V_{EB}=4V, I_C = 0	<100	<100	nA
Collector Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C=150mA, I_B=15mA	<0.7	<0.7	V
		I_C=200mA, I_B=20mA	<1.0		V
Collector Emitter Voltage	V_{CEO}	I_C=1mA, I_B=0	>120	>140	V



TO-92

Plastic Package

ELECTRICAL CHARACTERISTICS (T_a=25ºC unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	CN454	CN455	UNITS
DC Current Gain	*h_{FE}	V_{CE}=10V, I_C=150mA	100 - 300	100 - 300	
		V_{CE}=1V, I_C=200mA	>30	-	
		V_{CE}=10V, I_C=1A	TYP10	TYP10	

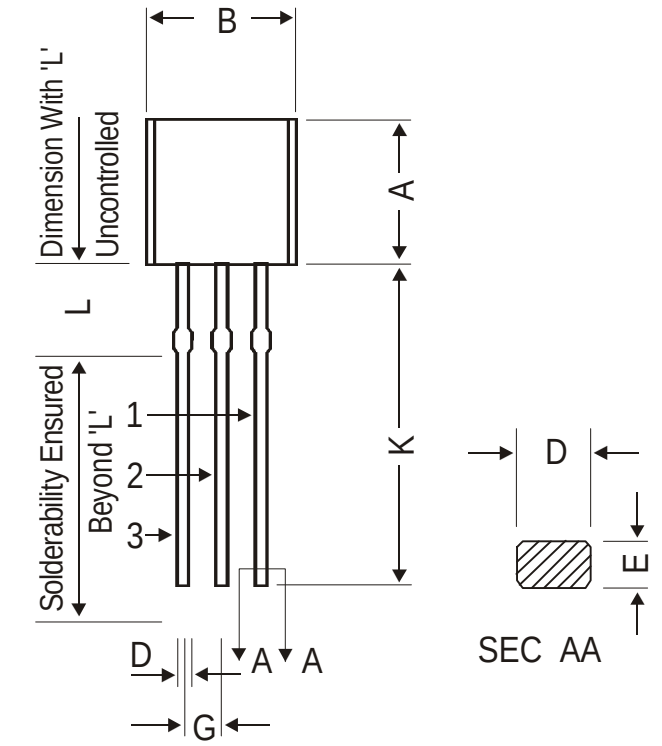
DYNAMIC CHARACTERISTICS

DESCRIPTION	SYMBOL	TEST CONDITION	CN454	CN455	UNITS
Transition Frequency	f_T	V_{CE}=10V, I_C=50mA, f=100MHz	>100	>100	MHz
Output Capacitance	C_{obo}	V_{CB}=10V, I_E=0, f=1MHz	<15	<15	pF

***Pulse Condition: Pulse Width = 300µs, Duty Cycle ≤ 2%.**

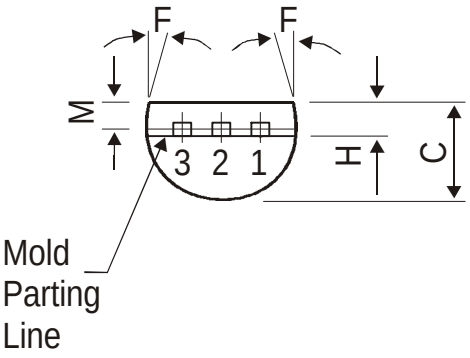
CN454_455Rev_3 211204E

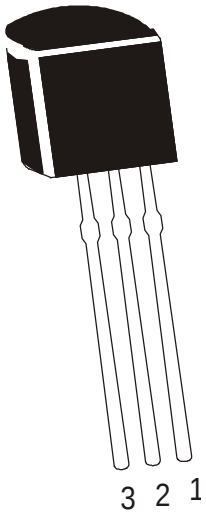
TO-92 Plastic Package



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	1.20	1.40
K	12.70	—
L	1.982	2.082
M	1.03	1.20

All dimensions are in mm





PIN CONFIGURATION
1. COLLECTOR
2. BASE
3. EMITTER

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.

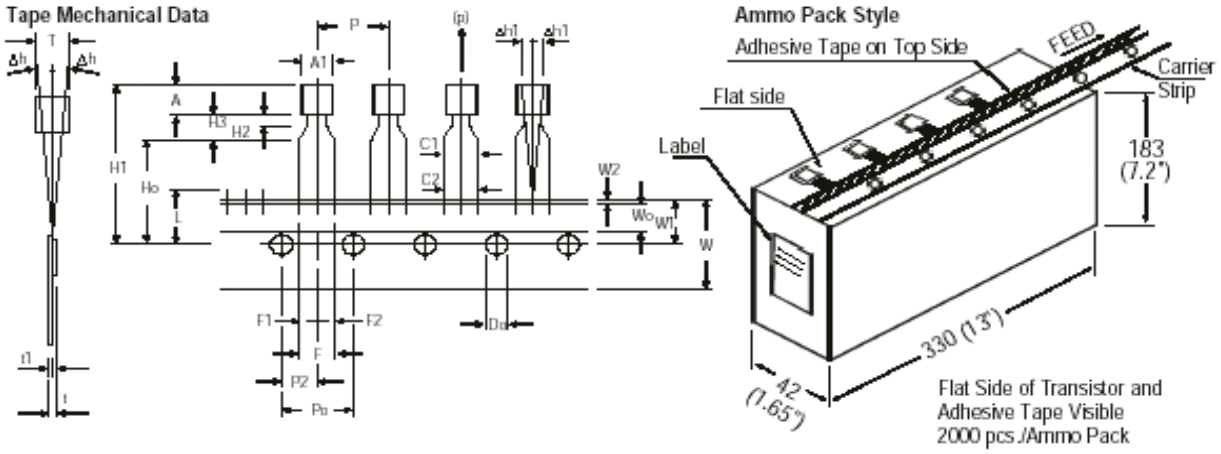
Packing Details

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

CN454_455Rev_3 211204E

TO-92
Plastic Package

TO-92 Tape and Ammo Pack



All dimensions are in mm

ITEM	SYMBOL	SPECIFICATION			
		MIN.	NOM.	MAX.	TOL.
BODY WIDTH	A1	4.45		5.20	
BODY HEIGHT	A	4.32		5.33	
BODY THICKNESS	T	3.18		4.19	
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	0.0		0.7	
LEAD WIRE CLINCH HEIGHT	Ho		16		± 0.5
COMPONENT HEIGHT	H1			24.0	
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	2.40		2.70	- 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.

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

TO-92
Plastic Package

Disclaimer

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CN454_455Rev_3 211204E