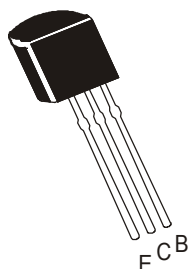


NPN SILICON PLANAR TRANSISTOR

CD965



TO-92
Plastic Package

Used for Medium Power Amplifier Applications

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

DESCRIPTION	SYMBOL	VALUE	UNIT
Collector Emitter Voltage	V_{CEO}	20	V
Collector Base Voltage	V_{CBO}	40	V
Emitter Base Voltage	V_{EBO}	7	V
Collector Current Continuous	I_C	5	A
Peak	I_{CP}	8	A
Power Dissipation	P_C	0.75	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C

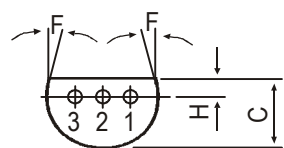
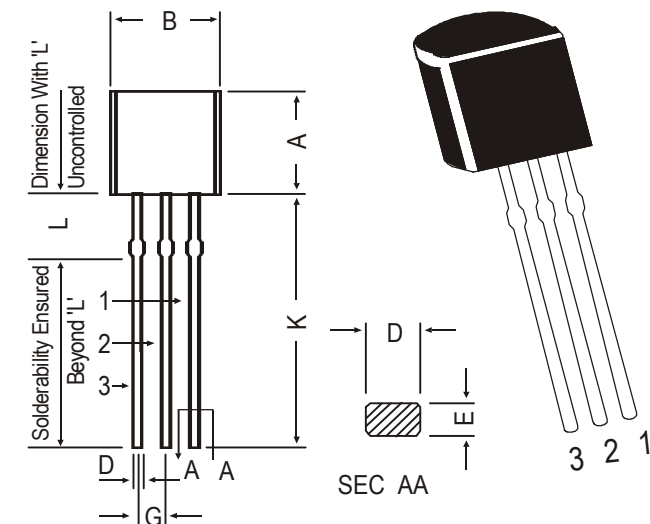
ELECTRICAL CHARACTERISTICS (Ta=25°C unless specified otherwise)

DESCRIPTION	SYMBOL	TEST CONDITION	VALUE	UNIT
Collector Emitter Breakdown Voltage	BV_{CEO}	$I_C=1mA$,	>20	V
Collector Base Emitter Voltage	BV_{CBO}	$I_C=100\mu A$	>40	V
Emitter Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu A$	>7	V
Collector Cut off Current	I_{CBO}	$V_{CB}=10V$	<100	nA
Emitter Cut off Current	I_{EBO}	$V_{EB}=7V$	<100	nA
DC Current Gain	h_{FE}	$V_{CE}=2V, I_C=500mA$	180-600	
	h_{FE}	CD965P	180-270	
	h_{FE}	CD965Q	230-380	
	h_{FE}	CD965R	340-600	
	h_{FE}	$V_{CE}=2V, I_C=2A$	>150	
Collector Emitter (sat) Voltage	$V_{CE(sat)}$	$I_C=3A, I_B=100mA$	<1.35	V
Base Emitter (sat) Voltage	$V_{BE(sat)}$	$I_C=1A, I_B=25mA$	<1.2	V
DYNAMIC CHARACTERISTICS				
Gain Bandwith Product	f_T	$I_C=50mA, V_{CE}=6V$	150(typ)	MHz
Output Capacitance	C_{ob}	$f=1MHz, V_{CB}=20V$	<50	pF

TO-92 Plastic Package

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack

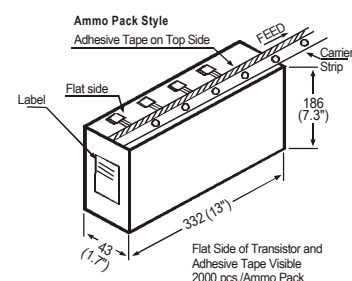
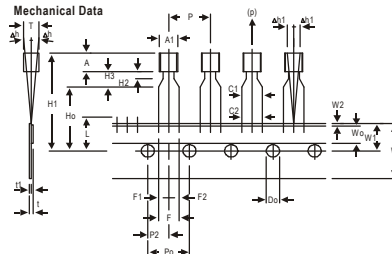


PIN CONFIGURATION

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 dimensions in mm.



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						
DISTANCE BETWEEN OUTER LEADS	P2		6.35		± 0.4	TO BE MEASURED AT BOTTOM OF CLINCH
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

1. Maximum alignment deviation between leads will not 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

Disclaimer

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