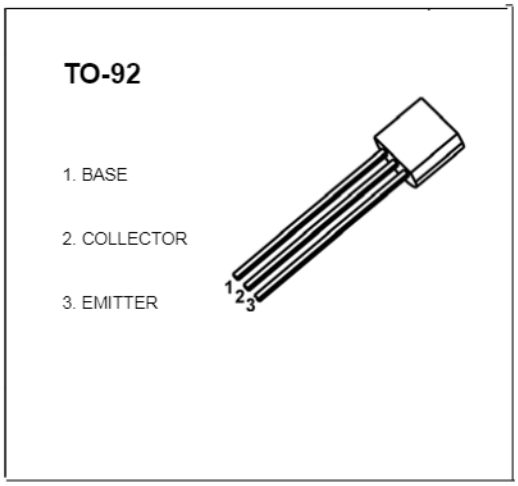
JCET

JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

TO-92 Plastic-Encapsulate Transistors

3DD13001B TRANSISTOR (NPN)

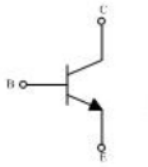


FEATURE

· power switching applications

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector -Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	400	V
V_{EBO}	Emitter-Base Voltage	7	V
I_C	Collector Current -Continuous	0.2	A
P_C	Collector Power Dissipation	0.75	W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55~150	℃



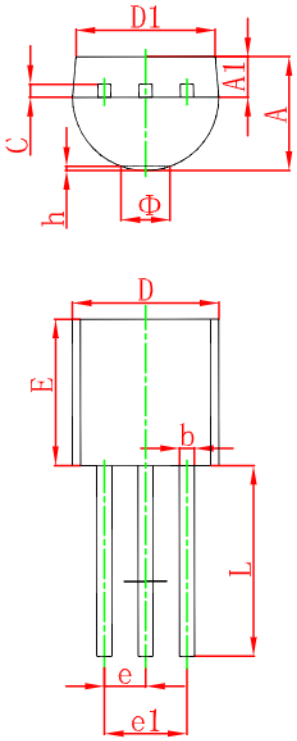
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C= 100μA , I_E=0	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C= 1mA , I_B=0	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100μA, I_C=0	7			V
Collector cut-off current	I_{CBO}	V_{CB}= 600V , I_E=0			100	μA
Collector cut-off current	I_{CEO}	V_{CE}= 400V, I_B=0			200	μA
Emitter cut-off current	I_{EBO}	V_{EB}=7V, I_C=0			100	μA
DC current gain	$h_{FE(1)}$	V_{CE}= 20V, I_C= 20mA	14		29	
	$h_{FE(2)}$	V_{CE}= 10V, I_C= 0.25 mA	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C= 50mA, I_B= 10 mA			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C= 50 mA, I_B= 10mA			1.2	V
Transition frequency	f_T	V_{CE}= 20V, I_C=20mA f = 1MHz	8			MHz
Fall time	t_f	I_C=50mA, I_{B1}=-I_{B2}=5mA, V_{CC}=45V			0.3	μs
Storage time	t_S				1.5	μs

CLASSIFICATION OF $h_{FE(1)}$

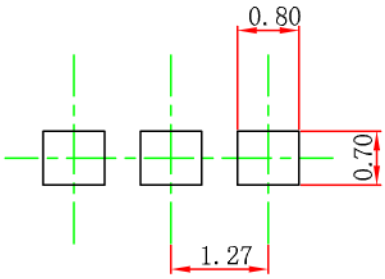
Range	14-17	17-20	20-23	23-26	26-29

TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout

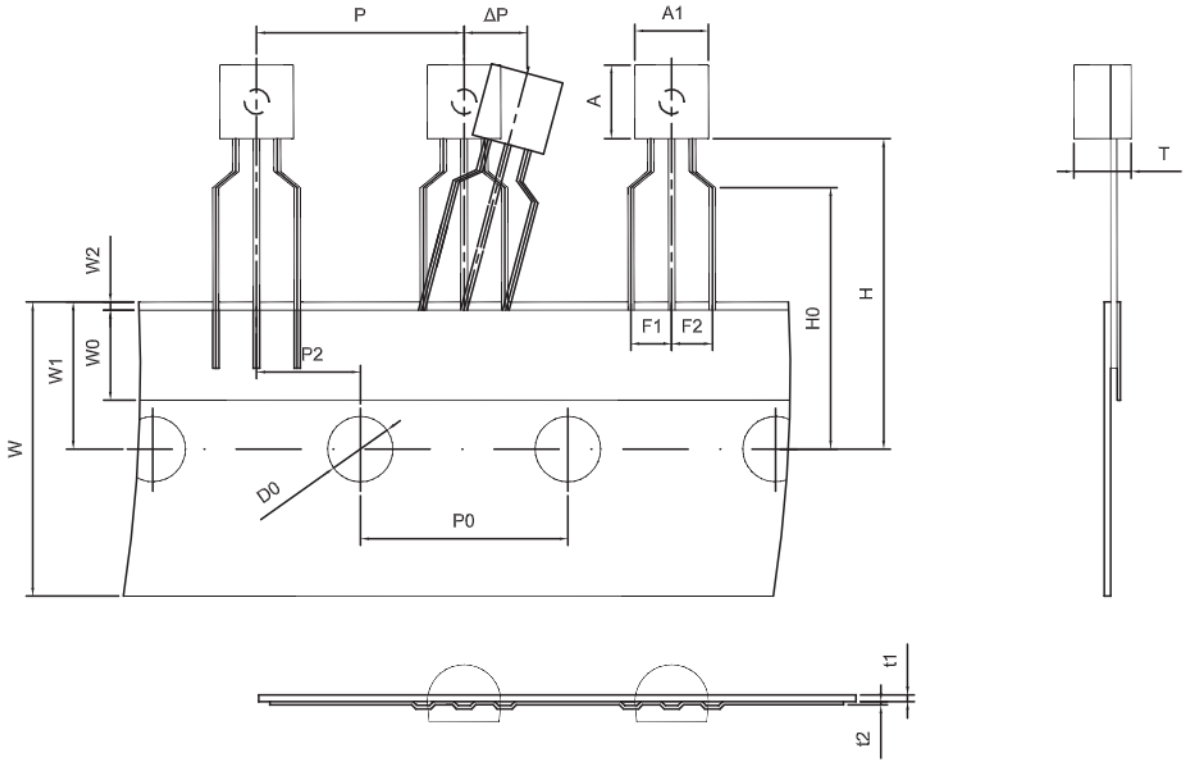


Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.

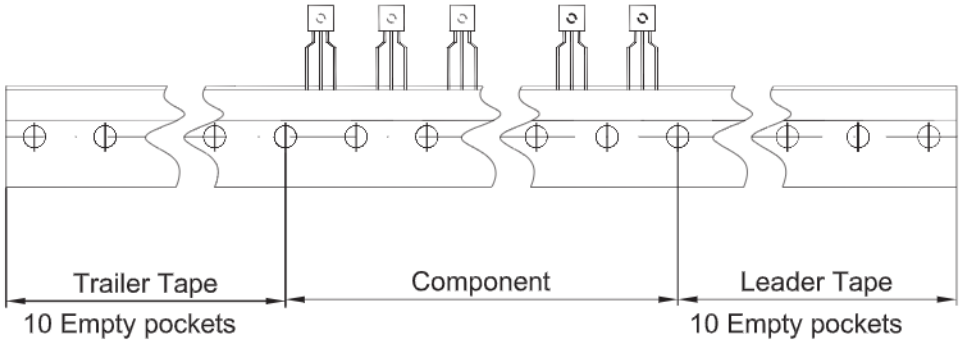
NOTICE

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TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250