

# DONGGUAN NANJING ELECTRONICS LTD.,

## TO-92 Plastic-Encapsulate Transistors

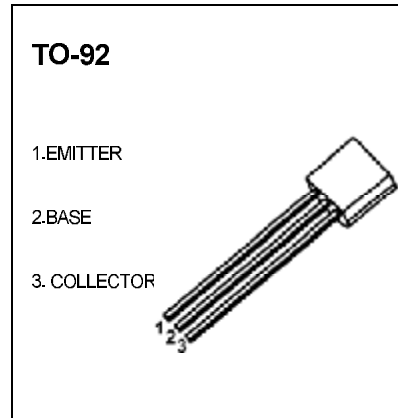
### MPS2907 TRANSISTOR (PNP)

#### FEATURES

- Complementary NPN Type available (MPS2222)

#### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	-60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	-40	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>C</sub>	Collector Current -Continuous	-0.6	A
P <sub>C</sub>	Collector Power Dissipation	0.625	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C



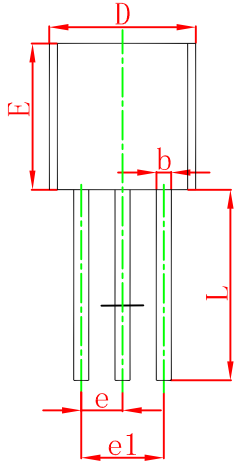
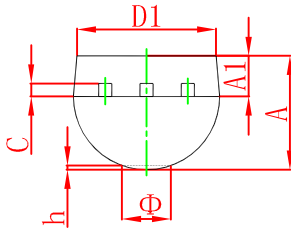
#### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-10μA, I <sub>E</sub> =0	-60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-10mA, I <sub>B</sub> =0	-40			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10μA, I <sub>C</sub> =0	-5			V
Collector cut-off current	I <sub>CB0</sub>	V <sub>CB</sub> =-50V, I <sub>E</sub> =0			-10	nA
Collector cut-off current	I <sub>CEX</sub>	V <sub>CE</sub> =-30V, V <sub>EB(off)</sub> =-0.5V			-50	nA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-3V, I <sub>C</sub> =0			-10	nA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-0.1mA	52			
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-150mA	100		300	
	h <sub>FE(3)</sub>	V <sub>CE</sub> =-10V, I <sub>C</sub> =-500mA	32			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA			-0.4	V
	V <sub>CE(sat)</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA			-0.67	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-150mA, I <sub>B</sub> =-15mA			-1	V
	V <sub>BE(sat)</sub>	I <sub>C</sub> =-500mA, I <sub>B</sub> =-50mA			-1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =-20V, I <sub>C</sub> =-50mA, f=100MHz	200			MHz
Delay time	t <sub>d</sub>	V <sub>CC</sub> =-30V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =-15mA			10	nS
Rise time	t <sub>r</sub>				25	nS
Storage time	t <sub>s</sub>	V <sub>CC</sub> =-6V, I <sub>C</sub> =-150mA, I <sub>B1</sub> =I <sub>B2</sub> =-15mA			225	nS
Fall time	t <sub>f</sub>				60	nS

#### CLASSIFICATION OF h<sub>FE(2)</sub>

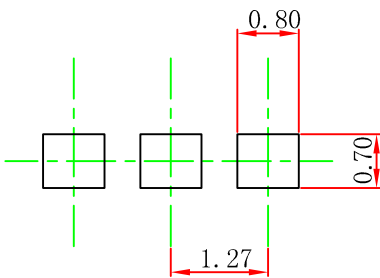
Rank	L	H
Range	100-200	200-300

## 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

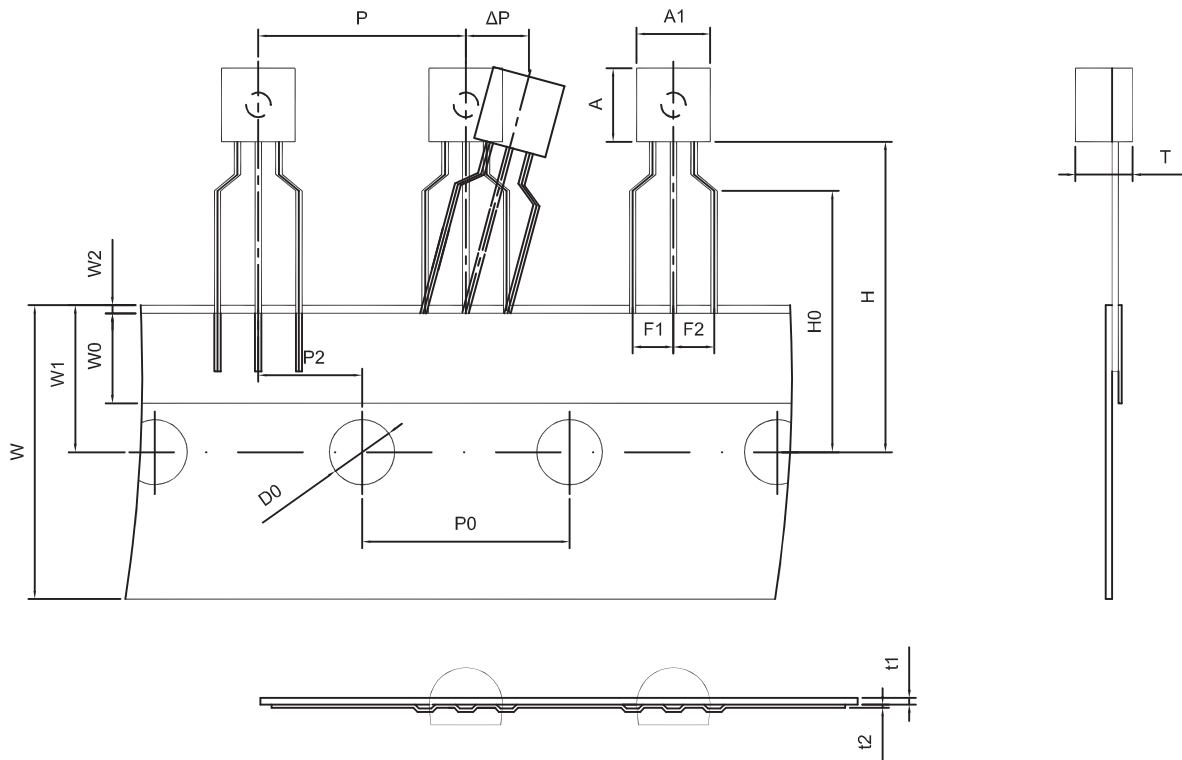
## TO-92 Suggested Pad Layout



### Note:

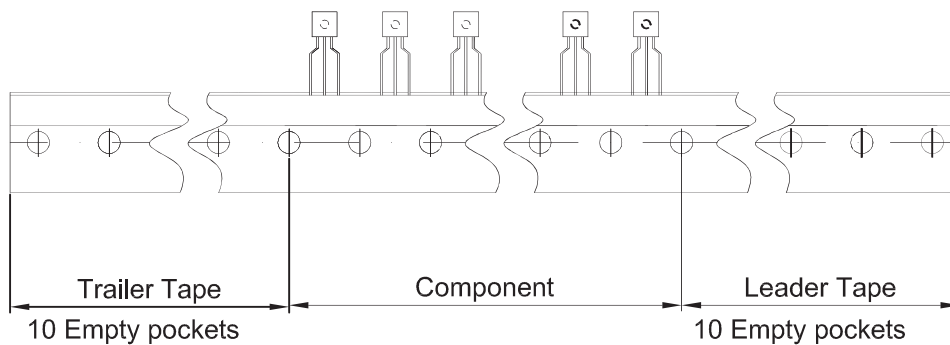
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$ mm.
3. The pad layout is for reference purposes only.

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