

## 2N2222A TRANSISTOR(NPN)

### FEATURE

Power dissipation

$P_{CM}$ : 0.625W ( $T_{amb}=25^{\circ}C$ )



Package TO-92

### MAXIMUM RATINGS\* ( $T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	UNIT
Collector-Base Voltage	$V_{CBO}$	75	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	6	V
Collector Current - Continuous	$I_C$	600	mA
Total Device Dissipation	$P_D$	625	mW
Junction Temperature	$T_J$	150	$^{\circ}C$
Junction and Storage Temperature	$T_{stg}$	-55~+150	$^{\circ}C$

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

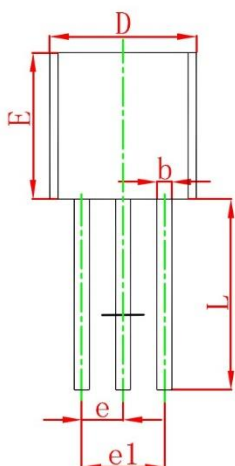
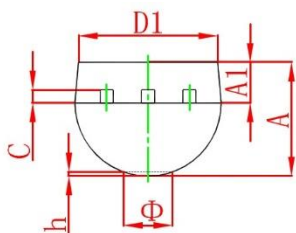
### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	75			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$			10	nA
Collector cut-off current	$I_{CEX}$	$V_{CE}=60V, V_{EB(OFF)}=3V$			10	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=3V, I_C=0$			100	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=10V, I_C=150mA$	100		300	
	$h_{FE(2)}$	$V_{CE}=10V, I_C=0.1mA$	40			
	$h_{FE(3)}$	$V_{CE}=10V, I_C=500mA$	42			
Collector-emitter saturation voltage	$V_{CE(sat)(1)}$	$I_C=500mA, I_B=50mA$			0.6	V
	$V_{CE(sat)(2)}$	$I_C=150mA, I_B=15mA$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$			1.2	V
Transition frequency	$f_T$	$V_{CE}=20V, I_C=20mA, f=100MHz$	300			MHz
Storage time	$T_{stg}$	$V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA$			225	ns

### CLASSIFICATION OF $h_{FE(1)}$

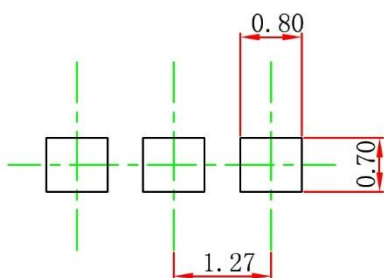
Rank	L	H
Range	100-200	200-300

### 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

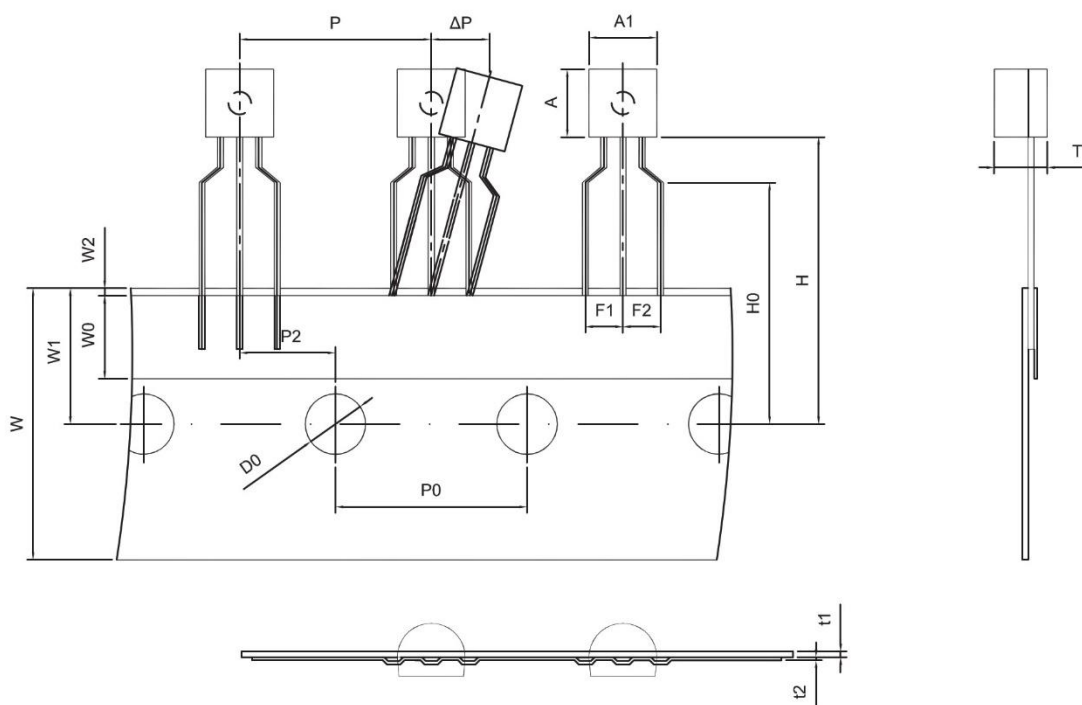


**Note:**

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

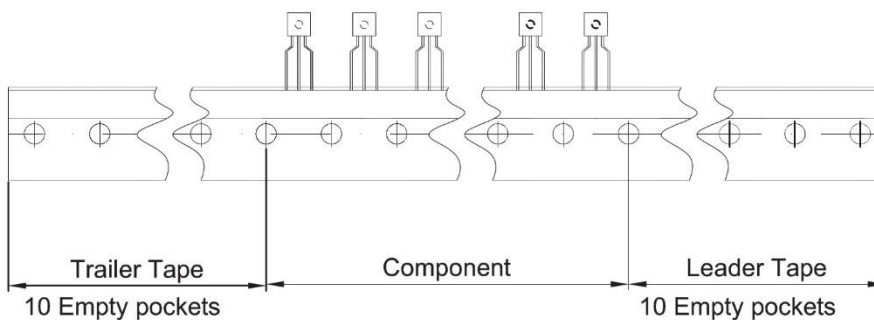
**TO-92 Tape and Reel**

TO-92 PACKAGE TAPEING DIMENSION



Dimensions 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

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.