



DONGGUAN NANJING ELECTRONICS LTD., TO-92 Plastic-Encapsulate Transistors

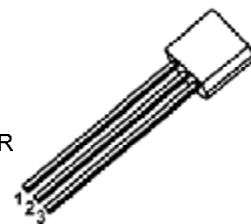
2SA673A TRANSISTOR (PNP)

FEATURES

- Low Frequency Amplifier
- Complementary Pair with 2SC1213A

TO - 92

1. EMITTER
2. COLLECTOR
3. BASE



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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-50	V
V_{EBO}	Emitter-Base Voltage	-4	V
I_{C}	Collector Current	-0.5	A
P_{C}	Collector Power Dissipation	400	mW
$R_{\theta\text{JA}}$	Thermal Resistance From Junction To Ambient	312	$^{\circ}\text{C/W}$
T_{j}	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

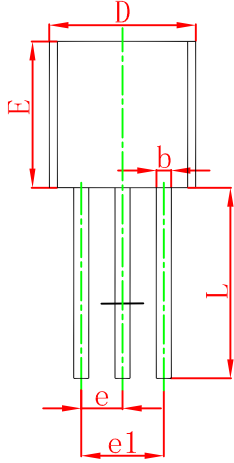
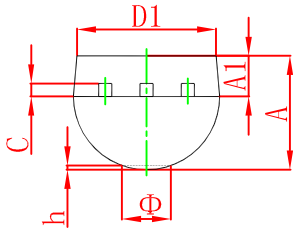
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=-0.01\text{mA}, I_{\text{E}}=0$	-50			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=-1\text{mA}, I_{\text{B}}=0$	-50			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=-0.01\text{mA}, I_{\text{C}}=0$	-4			V
Collector cut-off current	I_{CBO}	$V_{\text{CB}}=-20\text{V}, I_{\text{E}}=0$			-0.5	μA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}}=-3\text{V}, I_{\text{C}}=0$			-0.5	μA
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=-3\text{V}, I_{\text{C}}=-10\text{mA}$	60		320	
	$h_{\text{FE}(2)}^*$	$V_{\text{CE}}=-3\text{V}, I_{\text{C}}=-500\text{mA}$	10			
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})}^*$	$I_{\text{C}}=-150\text{mA}, I_{\text{B}}=-15\text{mA}$			-0.6	V
Base-emitter voltage	V_{BE}	$V_{\text{CE}}=-3\text{V}, I_{\text{C}}=-10\text{mA}$			-0.75	V

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.

CLASSIFICATION OF $h_{\text{FE}(1)}$

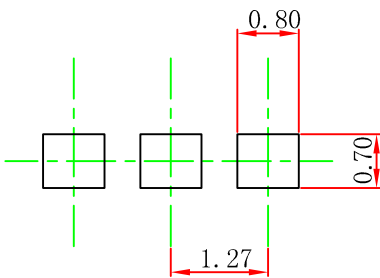
RANK	B	C	D
RANGE	60-120	100-200	160-320

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

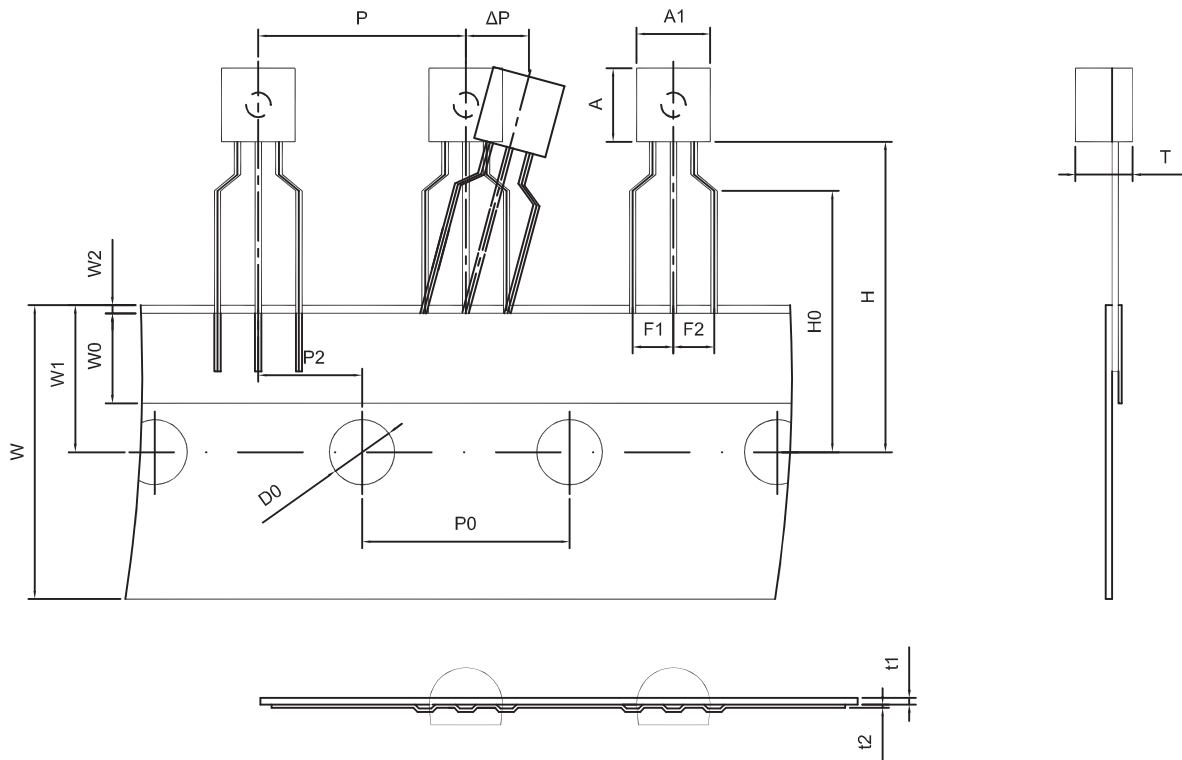
TO-92 Suggested Pad Layout



Note:

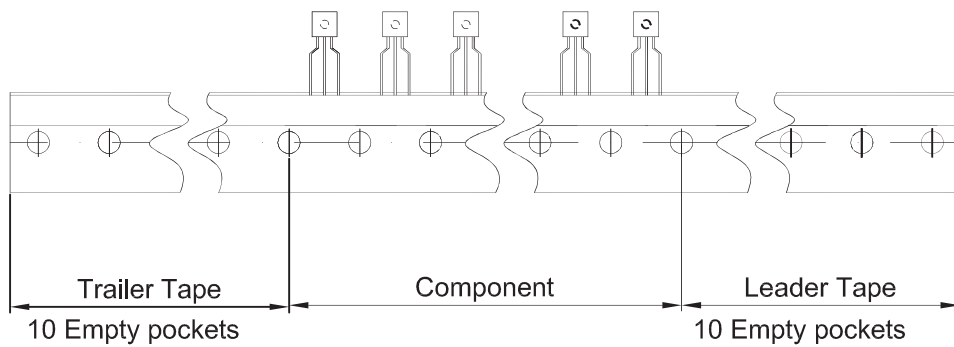
1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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