



JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

TO-92MOD Plastic-Encapsulate Transistors

KSA928A TRANSISTOR(PNP)

FEATURE

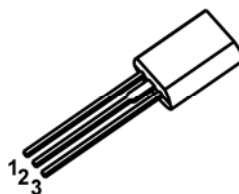
- Audio Power Amplifier
- Complement to Application

TO-92MOD

1.EMITTER

2.COLLECTOR

3.BASE



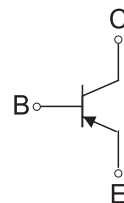
MARKING

A928A
•XXX

B
C
E

A928A=Device code
Solid dot = Green mdding compound device,
if none, the normal device
XXX=Code

Equivalent Circuit



ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
KSA928A	TO-92MOD	Bulk	500pcs/Bag
KSA928A-TA	TO-92MOD	Tape	2000pcs/Box

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol Para	meter	Value	Unit
V _{CBO}	Collector-Base Voltage	-30	V
V _{CEO}	Collector-Emitter Voltage	-30	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current -Continuous	-2	A
P _C	Collector Power Dissipation	1	W
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55 ~ +150	°C

ELECTRICAL CHARACTERISTICS

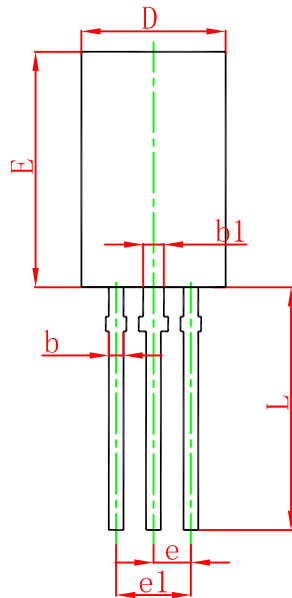
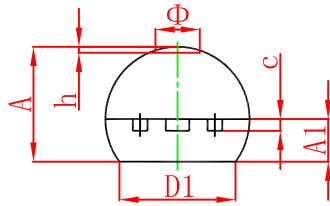
$T_a=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)_{CBO}}$	$I_C = -100\mu\text{A}$, $I_E = 0$ -30				V
Collector-emitter breakdown voltage	$V_{(BR)_{CEO}}$	$I_C = -10\text{ mA}$, $I_B = 0$ -30				V
Emitter-base breakdown voltage	$V_{(BR)_{EBO}}$	$I_E = -1\text{mA}$, $I_C = 0$ -5				V
Collector cut-off current	I_{CBO}	$V_{CB} = -30\text{V}$, $I_E = 0$			-0.1	$\mu\text{ A}$
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}$, $I_C = 0$			-0.1	$\mu\text{ A}$
DC current gain	h_{FE}	$V_{CE} = -2\text{V}$, $I_C = -500\text{mA}$	100		320	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1.5\text{ A}$, $I_B = -0.03\text{A}$			-2	V
Base-emitter voltage	V_{BE}	$I_C = -500\text{ mA}$, $V_{CE} = -2\text{V}$			-1	V
Transition frequency	f_T	$V_{CE} = -2\text{ V}$, $I_C = -500\text{mA}$	120			MHz
Collector output capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		48		pF

CLASSIFICATION OF h_{FE}

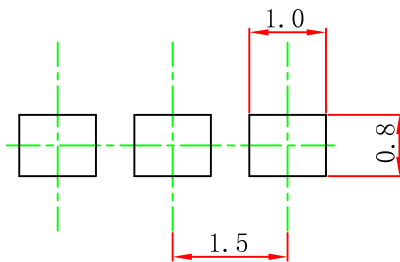
Rank	O	Y
Range	100-200	160-320

TO-92MOD Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.800	5.000	0.189	0.197
A1	1.730	2.030	0.068	0.080
b	0.440	0.600	0.017	0.024
b1	0.940	1.100	0.037	0.043
c	0.350	0.450	0.014	0.018
D	5.900	6.100	0.232	0.240
D1	4.000		0.157	
E	8.500	8.700	0.335	0.343
e	1.500 TYP.		0.059 TYP.	
e1	2.900	3.100	0.114	0.122
L	13.800	14.200	0.543	0.559
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92MOD Suggested Pad Layout



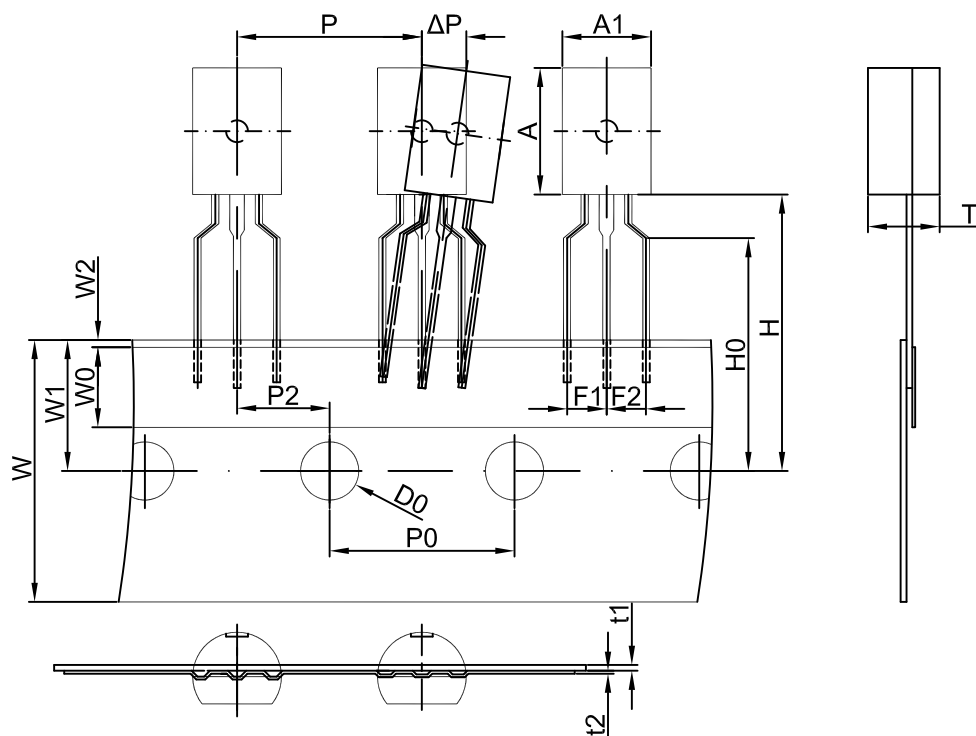
Note:

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

NOTICE

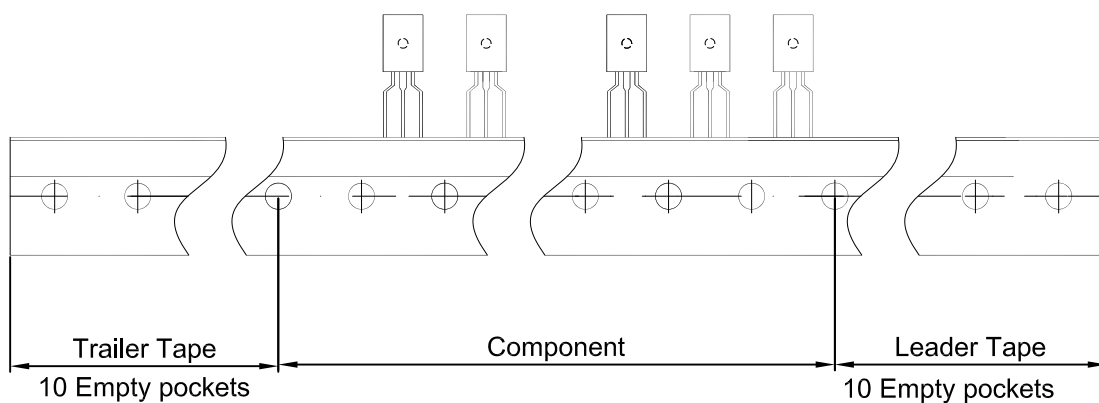
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TO-92MOD PACKAGE TAPING DIMENSION



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
6.0	8.6	4.9	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	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92MOD	2000 pcs	333×245×43	20,000 pcs	573×404×266