

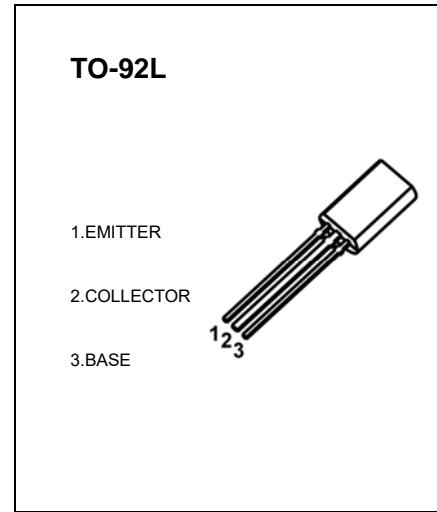


TO-92L Plastic-Encapsulate Transistors

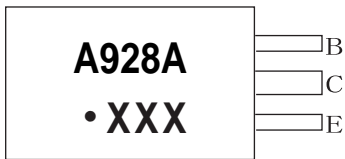
KSA928A TRANSISTOR(PNP)

FEATURE

- Audio Power Amplifier
- Complement to Application

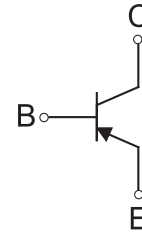


MARKING



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

Equivalent Circuit



ORDERING INFORMATION

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

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

Symbol	Parameter	Value	Unit
V _{CB0}	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 to +150	°C

ELECTRICAL CHARACTERISTICS

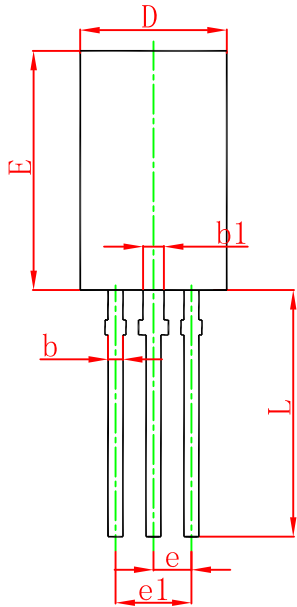
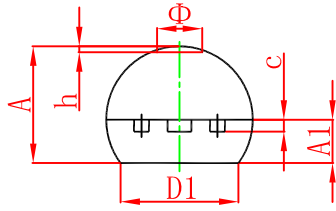
$T_a=25^\circ\text{C}$ unless otherwise specified

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

CLASSIFICATION OF h_{FE}

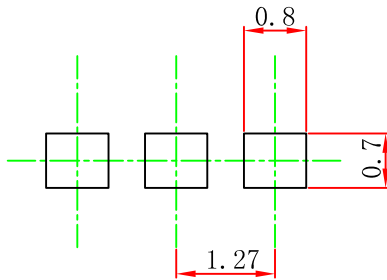
Rank	O	Y
Range	100-200	160-320

TO-92L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.750	4.050	0.148	0.159
A1	1.280	1.580	0.050	0.062
b	0.380	0.550	0.015	0.022
b1	0.620	0.780	0.024	0.031
c	0.350	0.450	0.014	0.018
D	4.750	5.050	0.187	0.199
D1	4.000		0.157	
E	7.850	8.150	0.309	0.321
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	13.800	14.200	0.543	0.559
Φ		1.600		0.063
h	0.000	0.300	0.000	0.012

TO-92L Suggested Pad Layout



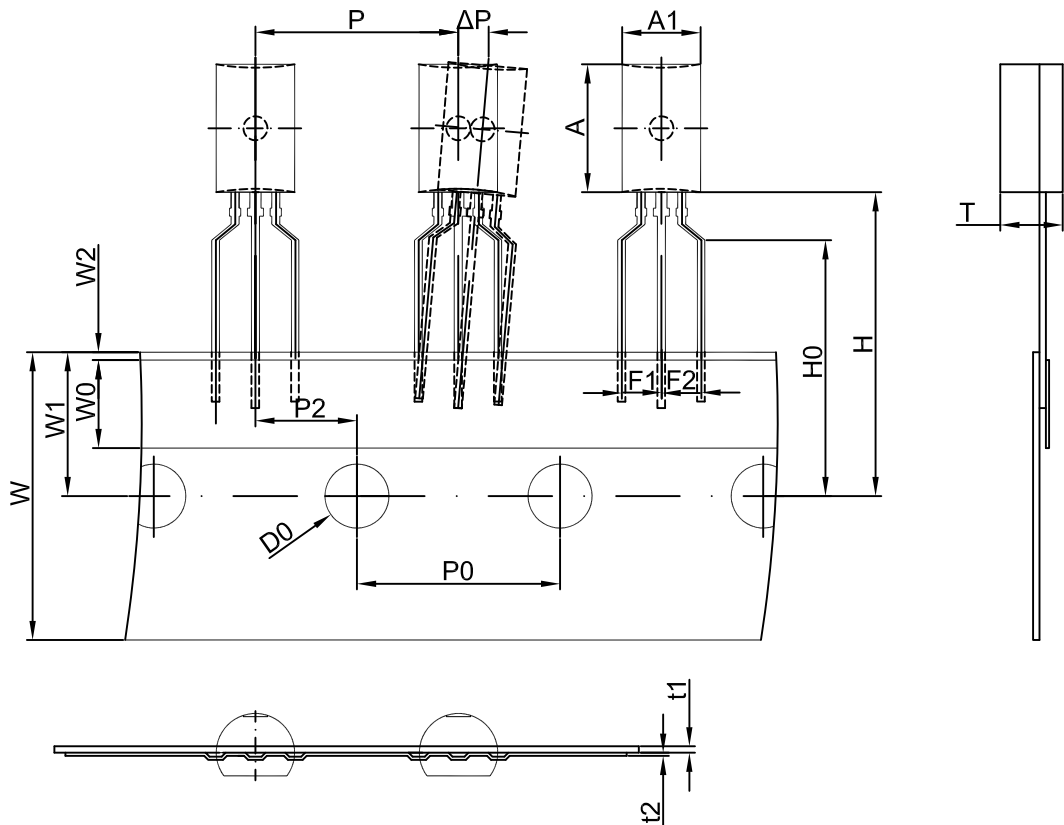
Note:

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

NOTICE

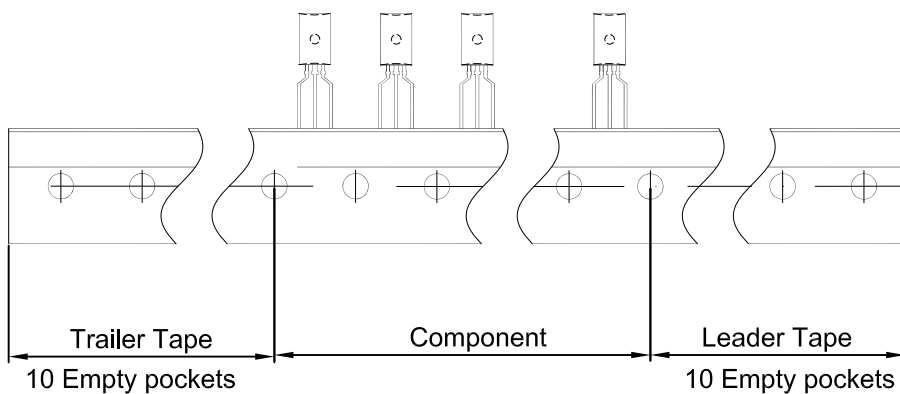
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TO-92L PACKAGE TAPING DIMENSION



Dimensions are in millimeter

A1	A	T	P	P0	P2	F1	F2	W
4.9	8.0	3.9	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-92L	2000 pcs	333×203×42	20,000 pcs	493×400×264