

**TO-92MOD Plastic-Encapsulate Transistors****2SA1145** TRANSISTOR (PNP)**FEATURES**

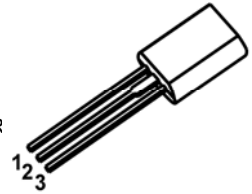
- Complementary to 2SC2705
- Small Collector Output Capacitance: $C_{ob}=2.5\text{pF(Typ.)}$
- High Transition Frequency: $f_T=200\text{MHz(Typ.)}$

TO-92MOD

1. EMITTER

2. COLLECTOR

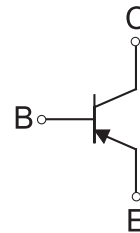
3. BASE

**MARKING**

A1145=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
2SA1145	TO-92MOD	Bulk	500pcs/Bag
2SA1145-TA	TO-92MOD	Tape	2000pcs/Box

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-150	V
V_{CEO}	Collector-Emitter Voltage	-150	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-50	mA
P_C	Collector Power Dissipation	0.8	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS

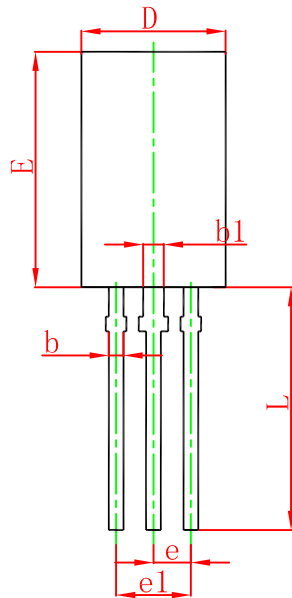
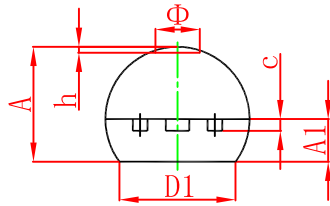
$T_a=25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\text{ }\mu\text{A}$, $I_E=0$	-150			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}$, $I_B=0$	-150			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\text{ }\mu\text{A}$, $I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-150\text{ V}$, $I_E=0$			-0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{ V}$, $I_C=0$			-0.1	μA
DC current gain	h_{FE}	$V_{CE}=-5\text{ V}$, $I_C=-10\text{mA}$	80		240	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-10\text{mA}$, $I_B=-1\text{mA}$			-1	V
Base-emitter voltage	V_{BE}	$V_{CE}=-5\text{ V}$, $I_C=-10\text{mA}$			-0.8	V
Transition frequency	f_T	$V_{CE}=-5\text{ V}$, $I_C=-10\text{mA}$		200		MHz
Collector output capacitance	C_{ob}	$V_{CB}=-10\text{ V}$, $I_E=0$, $f=1\text{ MHz}$		2.5		pF

CLASSIFICATION OF h_{FE}

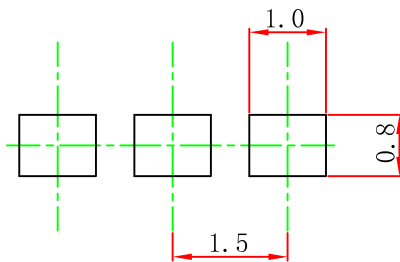
Rank	O	Y
Range	80-160	120-240
Marking		

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



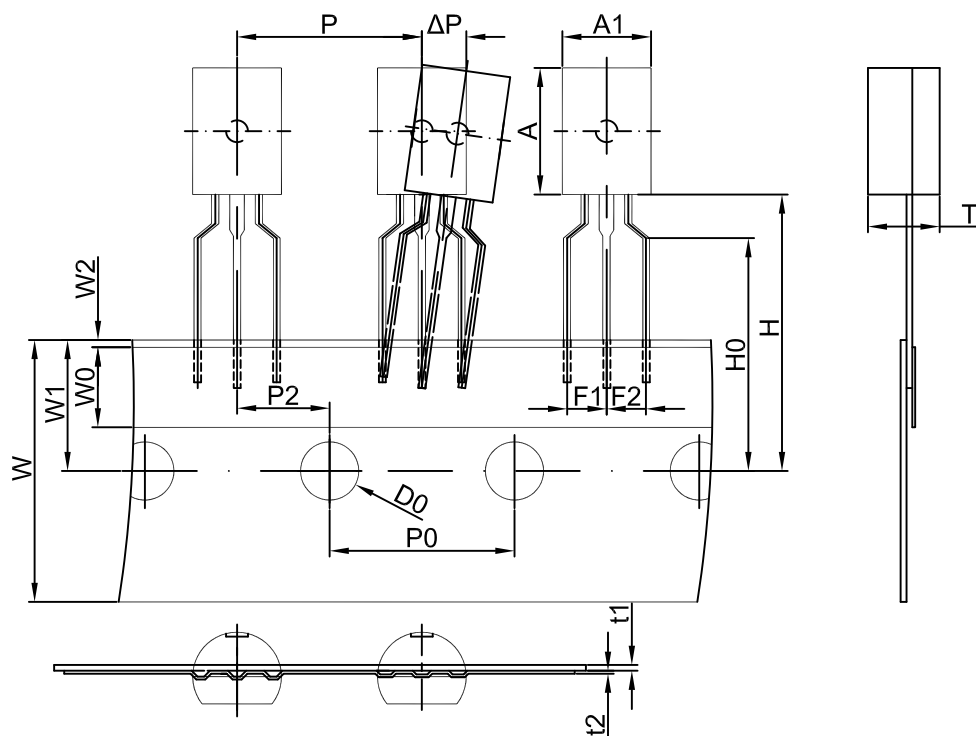
Note:

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

NOTICE

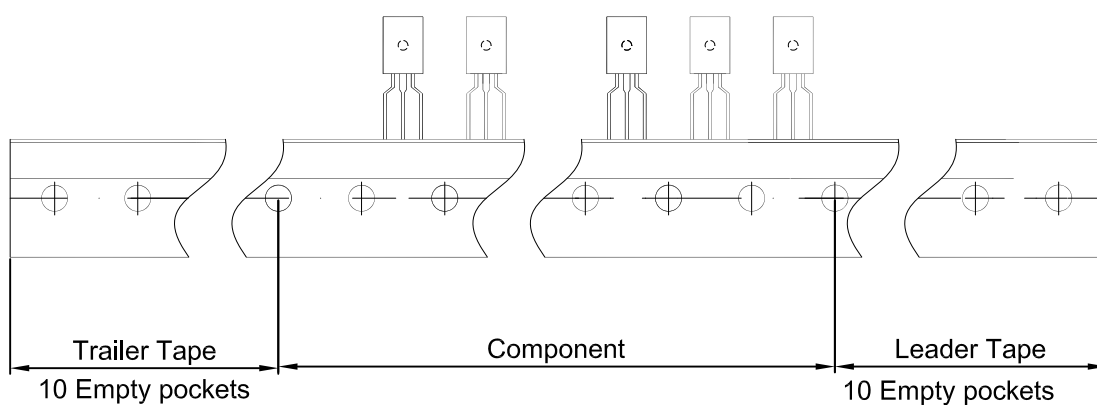
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TO-92MOD PACKAGE TAPING DIMENSION



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