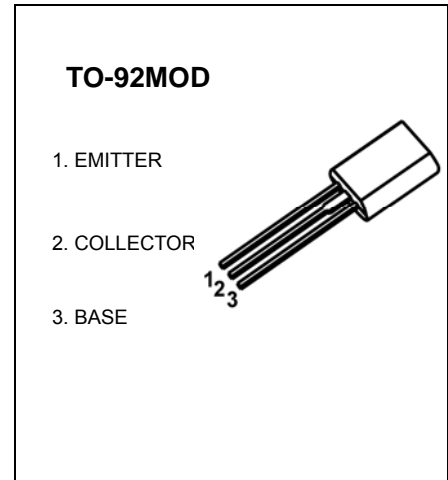


## TO-92MOD Plastic-Encapsulate Transistors

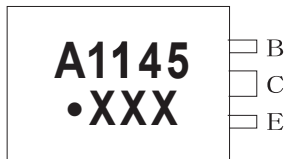
### 2SA1145 TRANSISTOR (PNP)

#### FEATURES

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

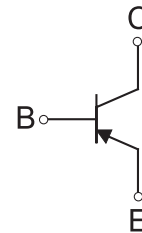


#### MARKING



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
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55 to +150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS

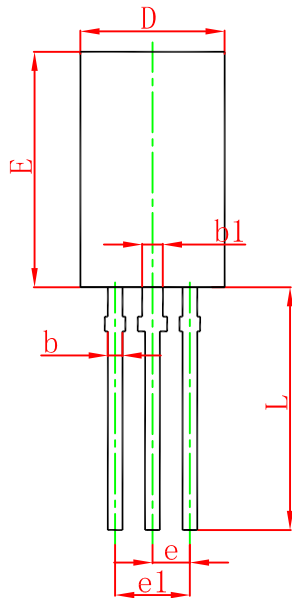
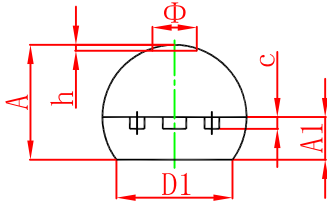
$T_a=25\text{ }^\circ\text{C}$  unless otherwise specified

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	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=-5\text{ V}$ , $I_C=0$			-0.1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE}=-5\text{ V}$ , $I_C=-10\text{mA}$	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 $h_{FE}$

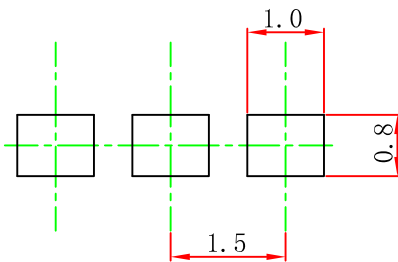
Rank	O	Y
Range	80-160	120-240
Marking		

## 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
$\Phi$		1.600		0.063
h	0.000	0.380	0.000	0.015

## TO-92MOD Suggested Pad Layout



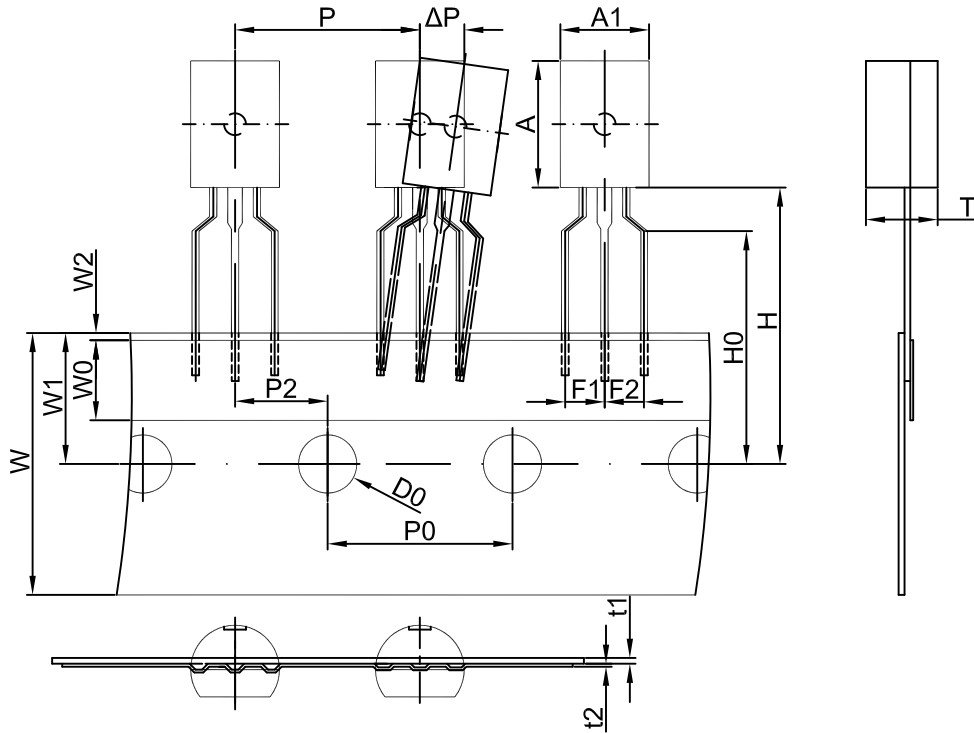
### Note:

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

### NOTICE

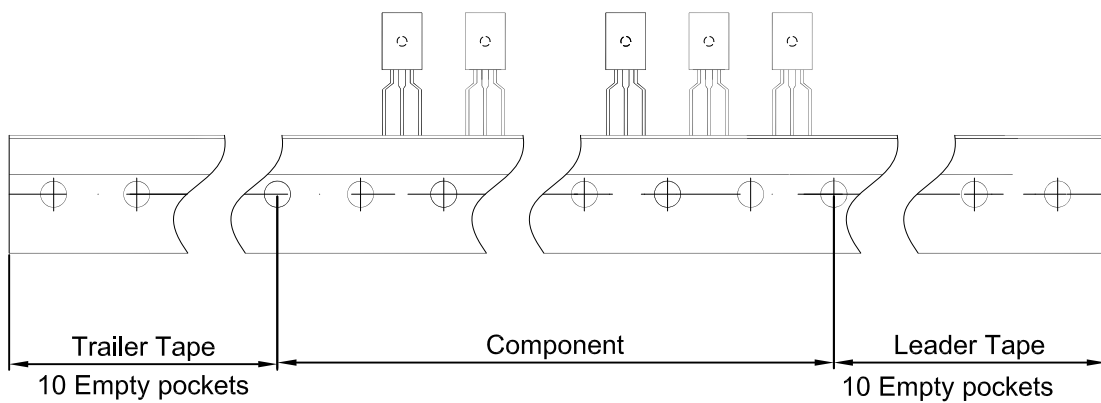
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# TO-92MOD PACKAGE TAPEING DIMENSION



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