

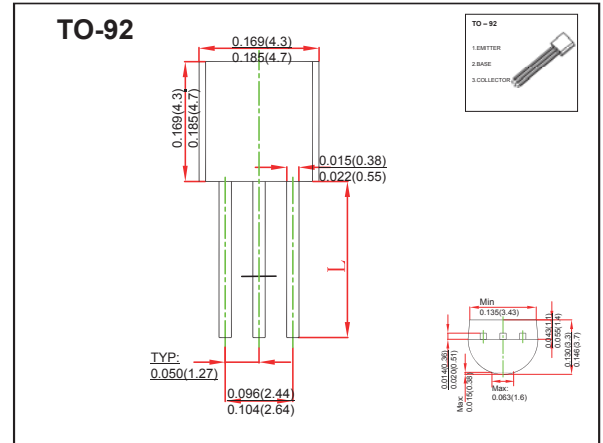
## TO-92 Plastic-Encapsulate Transistors

### FEATURES

- Low collector Saturation Voltage:  $V_{ce(sat)} = -0.3V$  (Max)
- Low Output Capacitance:  $C_{ob} = 4pF$  (Typ.)
- Complementary Pair with 2SC5343
- TRANSISTOR ( PNP )

### MECHANICAL DATA

- Case style: TO-92 molded plastic
- Mounting position: any



## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (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	-5	V
$I_C$	Collector Current -Continuous	-0.15	A
$P_D$	Collector Power Dissipation	625	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	200	°C / W
$T_J$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55 ~ +150	°C

### ORDERING INFORMATION

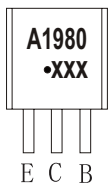
Part Number	Package	Packing Method	Pack Quantity
2SA1980	TO-92	Bulk	1000pcs/Bag
2SA1980-TA	TO-92	Tape	2000pcs/Box

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu A, I_E = 0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10mA, I_B = 0$	-50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu A, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -50V, I_E = 0$			-0.1	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{EB} = -5V, I_C = 0$			-0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE} = -6V, I_C = -2mA$	70		700	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$			-0.3	V
Transition frequency	$f_T$	$V_{CE} = -10V, I_C = -1mA$	80			MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$		4	7	pF
Noise figure	NF	$V_{CE} = -6V, I_C = -0.1mA, f = 1KHz, R_S = 10K\Omega$			10	dB

### CLASSIFICATION OF $h_{FE}$

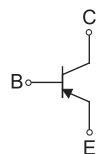
Rank	O	Y	G	L
Range	70-140	120-240	200-400	300-700

### MARKING

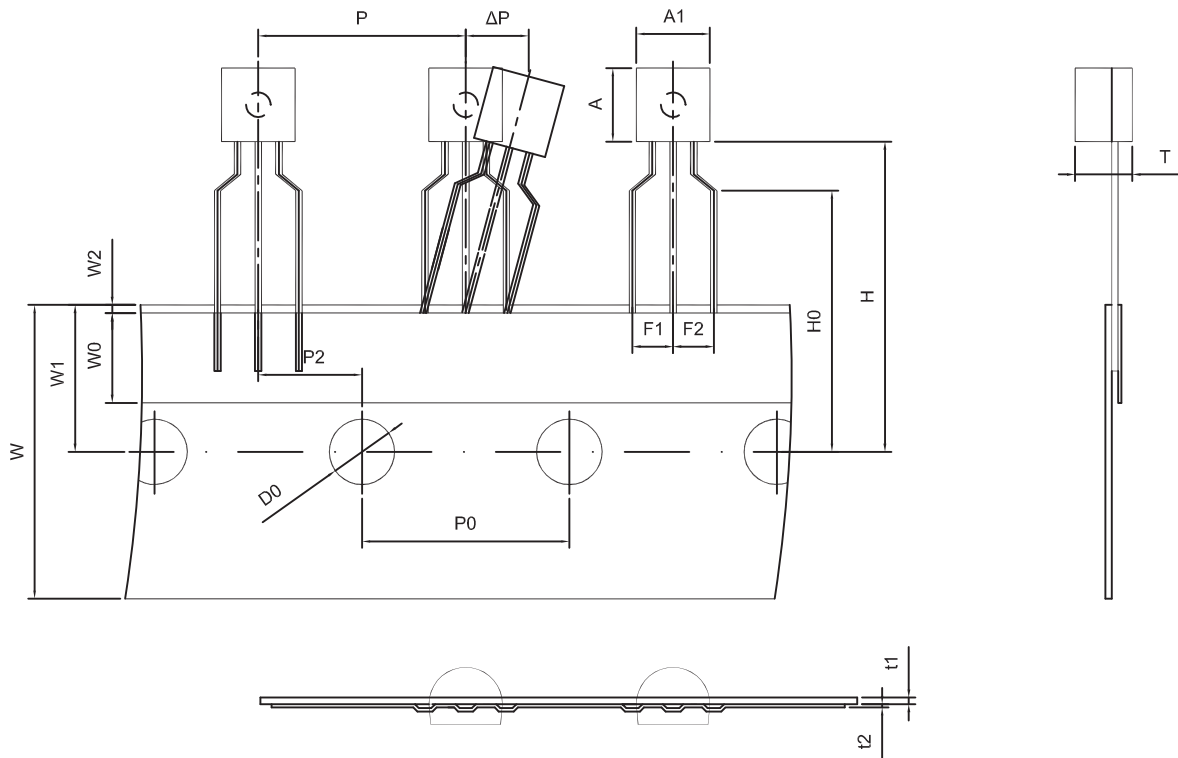


A1980=Device code  
 Solid dot=Green molding compound device,  
 if none, the normal device  
 XXX=Code

### Equivalent Circuit

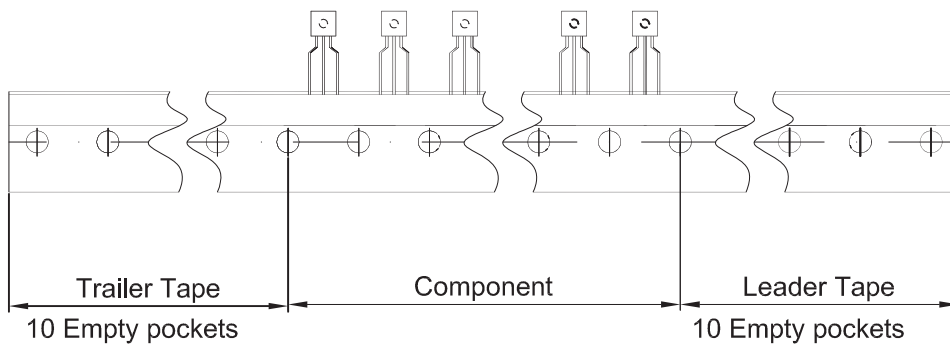


TO-92 PACKAGE TAPEING DIMENSION



Dimensions 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