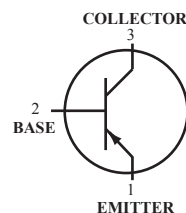
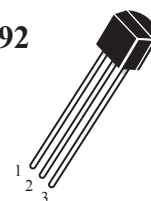


### PNP General Purpose Transistors

 Lead(Pb)-Free



TO-92



### MAXIMUM RATINGS

Rating	Symbol	2907	2907A	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	-40	-60	V <sub>dc</sub>
Collector-Base Voltage	V <sub>CBO</sub>		-60	V <sub>dc</sub>
Emitter-Base Voltage	V <sub>EBO</sub>		-5.0	V <sub>dc</sub>
Collector Current-Continuous	I <sub>C</sub>		-600	mA <sub>dc</sub>

### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) T <sub>A</sub> =25°C Derate above 25°C	P <sub>D</sub>	225	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	1.8	mW/°C
Total Device Dissipation Alumina Substrate, (2) T <sub>A</sub> =25°C Derate above 25°C	P <sub>D</sub>	300	mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	2.4	mW/°C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	417	°C/W
Junction and Storage, Temperature	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage (I <sub>C</sub> = -10 mA <sub>dc</sub> , I <sub>B</sub> =0)	MPS2907 MPS2907A	V <sub>(BR)CEO</sub>	-40 -60	-	V <sub>dc</sub>
Collector-Base Breakdown Voltage (I <sub>C</sub> = -10 μA <sub>dc</sub> , I <sub>E</sub> =0)		V <sub>(BR)CBO</sub>	-60	-	V <sub>dc</sub>
Emitter-Base Breakdown Voltage (I <sub>E</sub> = -10 μA <sub>dc</sub> , I <sub>C</sub> =0)		V <sub>(BR)EBO</sub>	-5.0	-	V <sub>dc</sub>
Collector Cutoff Current (V <sub>CE</sub> = -30 V <sub>dc</sub> , V <sub>EB</sub> (off)= -0.5V <sub>dc</sub> )		I <sub>CEX</sub>	-	-50	nA <sub>dc</sub>
Collector Cutoff Current (V <sub>CB</sub> = -50 V <sub>dc</sub> , I <sub>E</sub> =0) (V <sub>CB</sub> = -50V <sub>dc</sub> , I <sub>E</sub> =0, T <sub>A</sub> =125 C)	MPS2907 MPS2907A MPS2907 MPS2907A	I <sub>CBO</sub>	- - - -	-0.020 -0.010 -20 -10	nA <sub>dc</sub>
Base Cutoff Current (V <sub>CE</sub> = -30V <sub>dc</sub> , V <sub>EB</sub> (off)= -0.5V <sub>dc</sub> )	MPS2907A	I <sub>B</sub>	-	-50	nA <sub>dc</sub>

1.FR-5=1.0 x 0.75 x 0.062 in

2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

**ELECTRICAL CHARACTERISTICS** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted) (Continued)

Characteristics	Symbol	Min	Max	Unit
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**ON CHARACTERISTICS**

DC Current Gain ( $I_C = -0.1 \text{ mAdc}, V_{CE} = -10 \text{ Vdc}$ )	MPS2907 MPS2907A	hFE	35 75	- -	
( $I_C = -1.0 \text{ mAdc}, V_{CE} = -10 \text{ Vdc}$ )	MPS2907 MPS2907A		50 100	- -	
( $I_C = -10 \text{ mAdc}, V_{CE} = -10 \text{ Vdc}$ )	MPS2907 MPS2907A		75 100	- -	
( $I_C = -150 \text{ mAdc}, V_{CE} = -10 \text{ Vdc}$ )	MPS2907 MPS2907A		100	300	
( $I_C = -500 \text{ mAdc}, V_{CE} = -10 \text{ Vdc}$ )	MPS2907 MPS2907A		30 50	- -	
Collector-Emitter Saturation Voltage ( $I_C = -150 \text{ mAdc}, I_B = -15 \text{ mAdc}$ ) ( $I_C = -500 \text{ mAdc}, I_B = -50 \text{ mAdc}$ )		$V_{CE(sat)}$	- -	-0.4 -1.6	Vdc
Base-Emitter Saturation Voltage ( $I_C = -150 \text{ mAdc}, I_B = -15 \text{ mAdc}$ ) ( $I_C = -500 \text{ mAdc}, I_B = -50 \text{ mAdc}$ )		$V_{BE(sat)}$	- -	-1.3 -2.6	Vdc

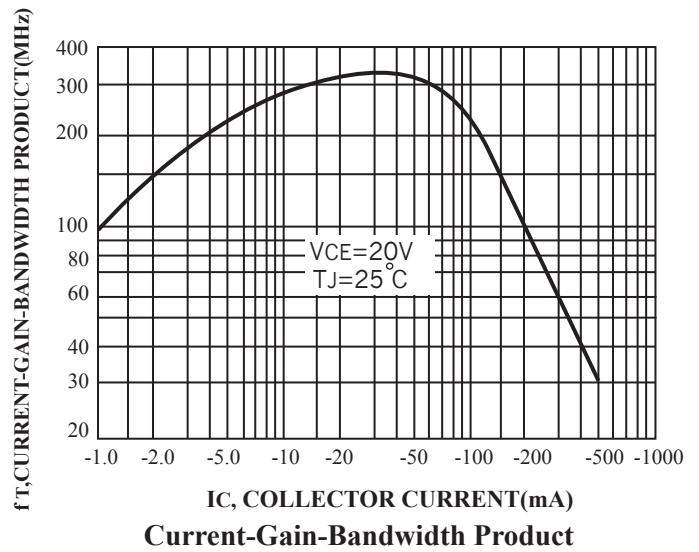
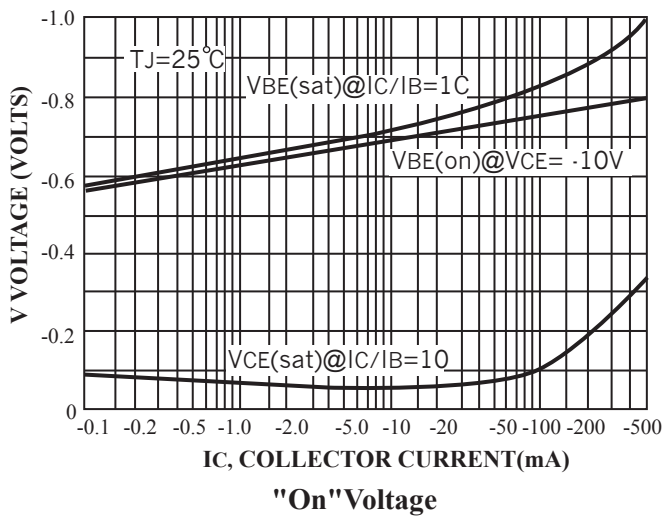
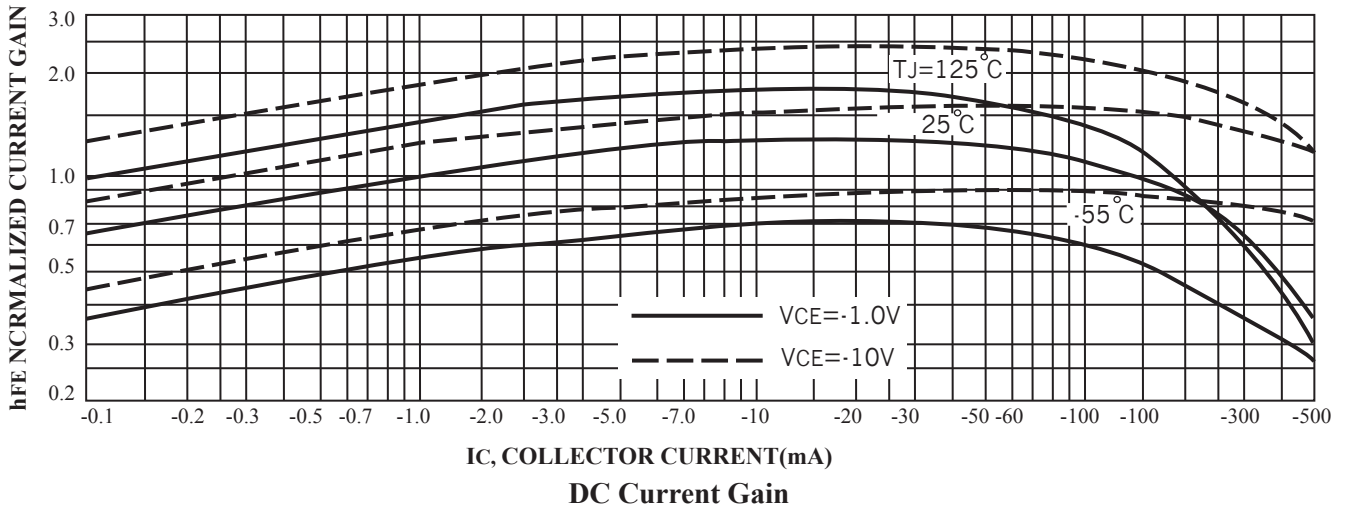
**SMALL-SIGNAL CHARACTERISTICS**

Current-Gain-Bandwidth Product (1),(2) ( $I_C = -50 \text{ mAdc}, V_{CE} = -20 \text{ Vdc}, f = 100 \text{ MHz}$ )	$f_T$	200	- -	MHz
Output Capacitance ( $V_{CB} = -10 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$ )	$C_{obo}$	-	8.0	pF
Input Capacitance ( $V_{EB} = -2.0 \text{ Vdc}, I_C = 0, f = 1.0 \text{ MHz}$ )	$C_{ibo}$	- -	30	pF

1. Pulse Test: Pulse Width < 300  $\mu\text{s}$ , Duty Cycle < 2.0%.

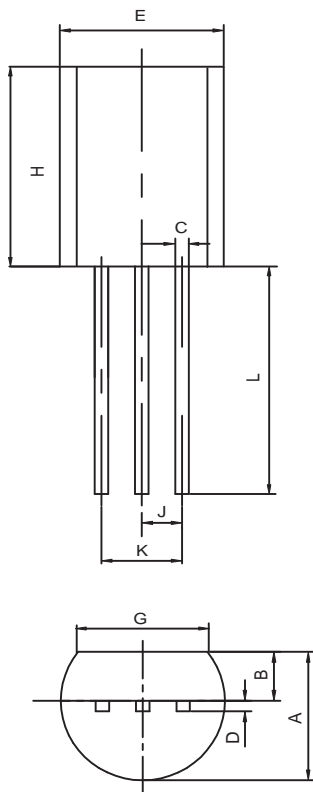
2.  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.

## Typical Characteristics



**TO-92 Outline Dimensions**

unit:mm



<b>TO-92</b>		
<b>Dim</b>	<b>Min</b>	<b>Max</b>
<b>A</b>	3.30	3.70
<b>B</b>	1.10	1.40
<b>C</b>	0.38	0.55
<b>D</b>	0.36	0.51
<b>E</b>	4.40	4.70
<b>G</b>	3.43	-
<b>H</b>	4.30	4.70
<b>J</b>	1.270TYP	
<b>K</b>	2.44	2.64
<b>L</b>	14.10	14.50