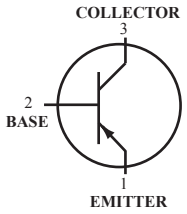
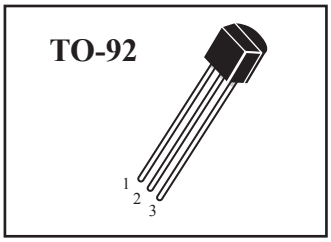
WEITRON

MPS2907
MPS2907A

PNP General Purpose Transistors





MAXIMUM RATINGS

Rating	Symbol	2907	2907A	Unit
Collector-Emitter Voltage	V_{CEO}	-40	-60	Vdc
Collector-Base Voltage	V_{CBO}	-60		Vdc
Emitter-Base VOltage	V_{EBO}	-5.0		Vdc
Collector Current-Continuous	I_C	-600		mAdc

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) TA=25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (2) TA=25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage, Temperature	$T_{J,Tstg}$	-55 to +150	°C

ELECTRICAL CHARACTERISTICS

Characteristics		Symbol	Min	Max	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage (I_C= -10 mAdc, I_B=0)	MPS2907 MPS2907A	$V_{(BR)CEO}$	-40 -60	- -	Vdc
Collector-Base Breakdown Voltage (I_C= -10 µAdc, I_E=0)		$V_{(BR)CBO}$	-60	- -	Vdc
Emitter-Base Breakdown Voltage (I_E= -10 µAdc, I_C=0)		$V_{(BR)EBO}$	-5.0	- -	Vdc
Collector Cutoff Current (V_{CE}= -30 Vdc, $V_{EB\ (0ff)}$= -0.5Vdc)		I_{CEX}	-	-50	nAdc
Collector Cutoff Current (V_{CB}= -50 Vdc, I_E=0) (V_{CB}= -50Vdc, I_E=0, T_A=125 C)	MPS2907 MPS2907A MPS2907 MPS2907A	I_{CBO}	- - - -	-0.020 -0.010 -20 -10	nAdc
Base Cutoff Current (V_{CE}= -30Vdc, $V_{EB(off)}$= -0.5Vdc)	MPS2907A	I_B	-	-50	nAdc

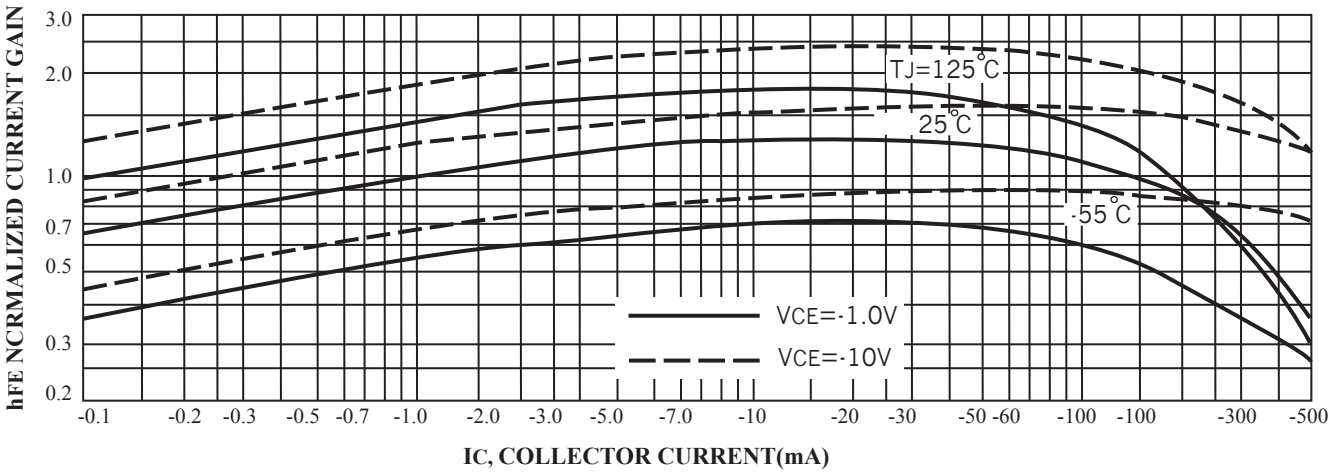
1.FR-5=1.0 x 0.75 x 0.062 in
2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted) (Countinued)

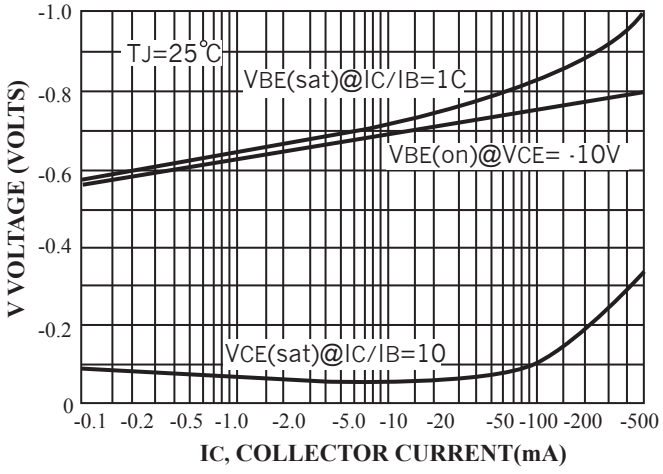
Characteristics		Symbol	Min	Max	Unit
ON CHARACTERISTICS					
DC Current Gain		h_{FE}			
(I_C= -0.1 mAdc, V_{CE}= -10 Vdc)	MPS2907		35	-	
	MPS2907A		75	-	
(I_C= -1.0 mAdc, V_{CE}= -10 Vdc)	MPS2907		50	-	
	MPS2907A		100	-	
(I_C= -10 mAdc, V_{CE}= -10 Vdc)	MPS2907		75	-	
	MPS2907A		100	-	
(I_C= -150 mAdc, V_{CE}= -10 Vdc)	MPS2907		100	300	
	MPS2907A				
(I_C= -500 mAdc, V_{CE}= -10 Vdc)	MPS2907		30	-	
	MPS2907A		50	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$			Vdc
(I_C= -150 mAdc, I_B= -15mAdc)			-	-0.4	
(I_C= -500 mAdc, I_B= -50mAdc)			-	-1.6	
Base-Emitter Saturation Voltage		$V_{BE(sat)}$			Vdc
(I_C= -150 mAdc, I_B= -15mAdc)			-	-1.3	
(I_C= -500 mAdc, I_B= -50mAdc)			-	-2.6	
SMALL-SIGNAL CHARACTERISTICS					
Current-Gain-Bandwidth Product (1),(2) (I_C= -50 mAdc, V_{CE} .=20 Vdc, f=100MHz)		f_T	200	-	MHz
				-	
Output Capacitance (V_{CB}= -10 Vdc, I_E=0, f=1.0MHz)		C_{obo}	-	8.0	pF
Input Capacitance (V_{EB}= -2.0 Vdc, I_C=0, f=1.0MHz)		C_{ibo}	-	30	pF
			-		

1.Pulse Test:Pulse Width 300 μs, Duty Cycle 2.0%.
2.f_T is defined as the frequency at which $|h_{fe}$ extrapolates to unity.

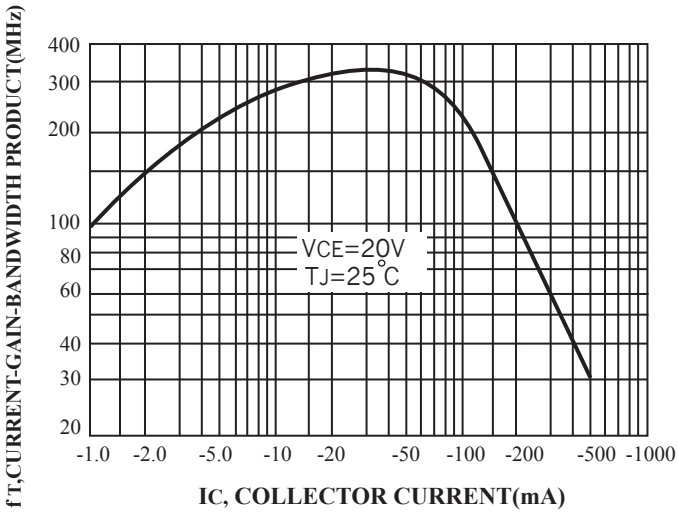
Typical Characteristics



DC Current Gain



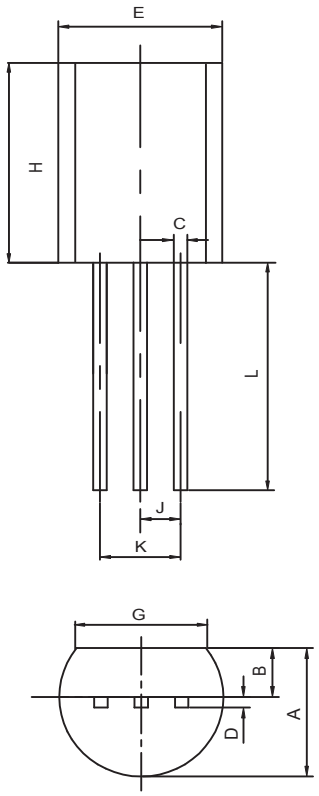
"On"Voltage



Current-Gain-Bandwidth Product

TO-92 Outline Dimensions

unit:mm



TO-92		
Dim	**Min**	**Max**
A	3.000	5.100
B	1.100	2.030
C	0.380	0.600
D	0.360	1.100
E	4.400	0.500
G	3.430	-
H	4.300	4.700
J	1.270TYP	
K	2.440	2.640
L	14.100	14.500