



# THE DATASHEET OF 2N3906-AP





# 2N3906

## PNP General Purpose Amplifier

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- € Capable of 600mW of Power Dissipation and 200mA Ic
- € Epoxy meets UL 94 V-0 flammability rating
- € Moisture Sensitivity Level 1
- € Through Hole Package
- € Halogen free available upon request by adding suffix "-HF"
- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
<b>OFF CHARACTERISTICS</b>				
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage* ( $I_C=-1.0mA, I_B=0$ )	-40		Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=-10\mu A, I_E=0$ )	-40		Vdc
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=-10\mu A, I_C=0$ )	-5.0		Vdc
$I_{BL}$	Base Cutoff Current ( $V_{CE}=-30Vdc, V_{BE}=-3.0Vdc$ )		-50	nAdc
$I_{CEX}$	Collector Cutoff Current ( $V_{CE}=-30Vdc, V_{BE}=-3.0Vdc$ )		-50	nAdc

### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain* ( $I_C=-0.1mA, V_{CE}=-1.0Vdc$ ) ( $I_C=-1.0mA, V_{CE}=-1.0Vdc$ ) ( $I_C=-10mA, V_{CE}=-1.0Vdc$ ) ( $I_C=-50mA, V_{CE}=-1.0Vdc$ ) ( $I_C=-100mA, V_{CE}=-1.0Vdc$ )	60	300	Vdc
		80		
		100		
		60		
		30		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=-10mA, I_B=-1.0mA$ ) ( $I_C=-50mA, I_B=-5.0mA$ )		-0.25 -0.4	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=-10mA, I_B=-1.0mA$ ) ( $I_C=-50mA, I_B=-5.0mA$ )	-0.65	-0.85 -0.95	Vdc

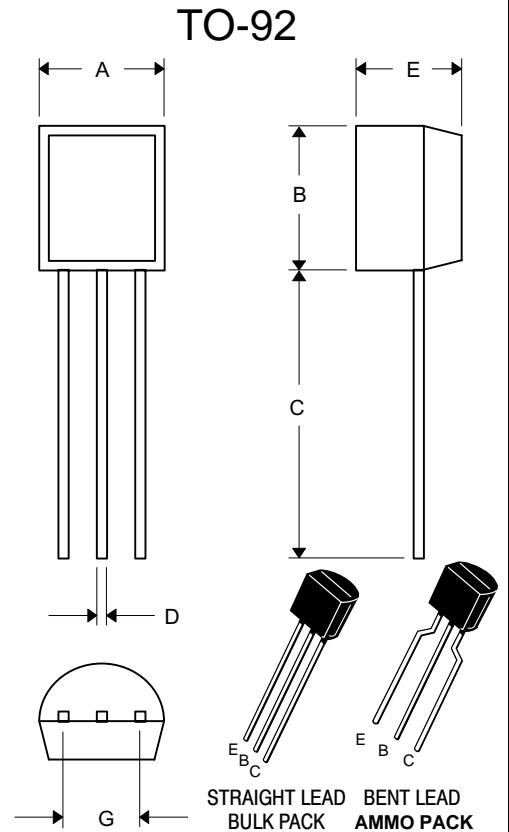
### SMALL-SIGNAL CHARACTERISTICS

$f_T$	Current Gain-Bandwidth Product ( $I_C=-10mA, V_{CE}=-20Vdc, f=100MHz$ )	250		MHz
$C_{obo}$	Output Capacitance ( $V_{CB}=-5.0Vdc, I_E=0, f=100kHz$ )		4.5	pF
$C_{ibo}$	Input Capacitance ( $V_{BE}=-0.5Vdc, I_C=0, f=100kHz$ )		10.0	pF
NF	Noise Figure ( $I_C=-100\mu A, V_{CE}=-5.0Vdc, R_S=1.0k\Omega$ $f=10Hz$ to $15.7kHz$ )		4.0	dB

### SWITCHING CHARACTERISTICS

$t_d$	Delay Time	( $V_{CC}=-3.0Vdc, V_{BE}=-0.5Vdc$ )	35	ns
$t_r$	Rise Time	( $I_C=-10mA, I_{B1}=-1.0mA$ )	35	ns
$t_s$	Storage Time	( $V_{CC}=-3.0Vdc, I_C=-10mA$ )	225	ns
$t_f$	Fall Time	( $I_{B1}=I_{B2}=-1.0mA$ )	75	ns

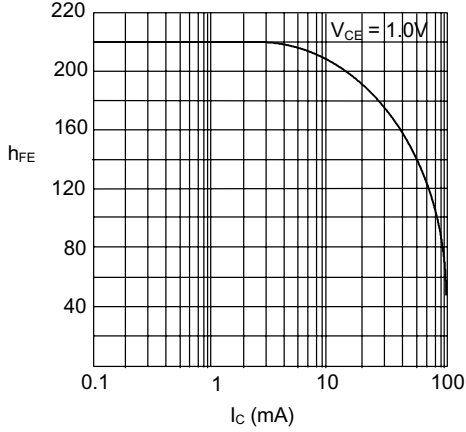
\*Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2.0\%$



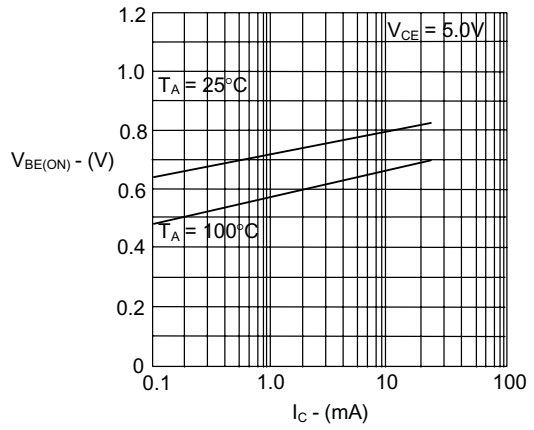
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.175	.185	4.45	4.70	
B	.175	.185	4.45	4.70	
C	.500	---	12.70	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	Straight Lead
	.173	.220	4.40	5.60	Bent Lead

\* For ammo packing detailed specification, click here to visit our website of product packaging for details.

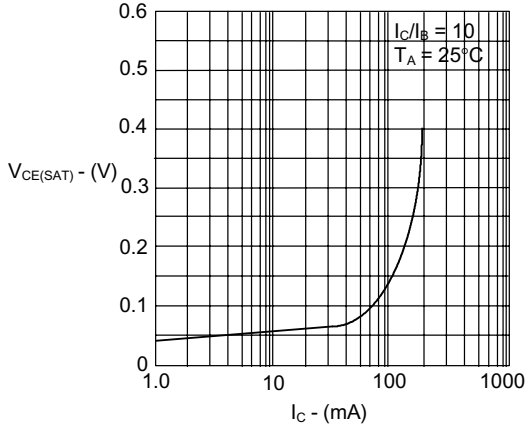
DC Current Gain vs Collector Current



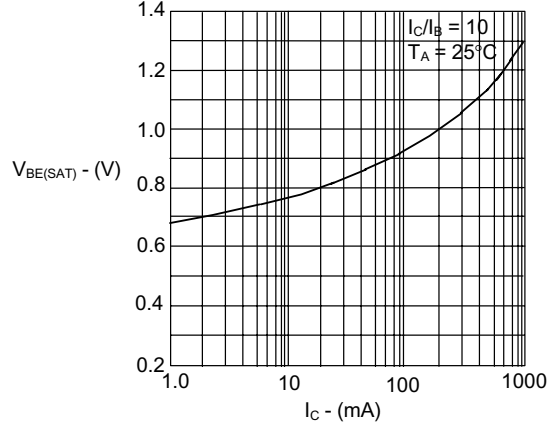
Base-Emitter ON Voltage vs Collector Current



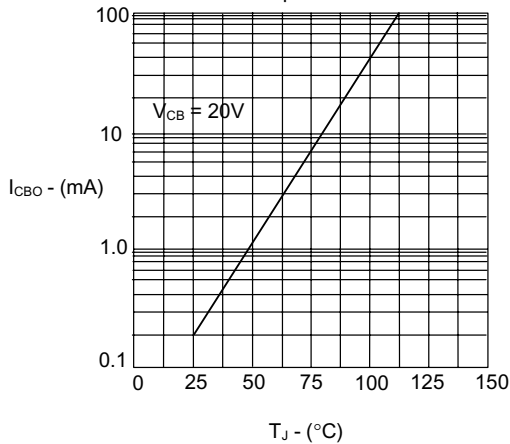
Collector-Emitter Saturation Voltage vs Collector Current



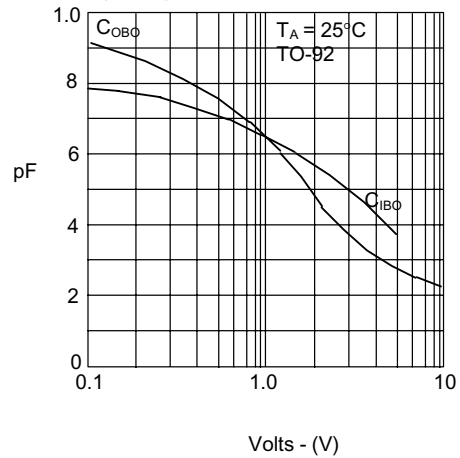
Base-Emitter Saturation Voltage vs Collector Current



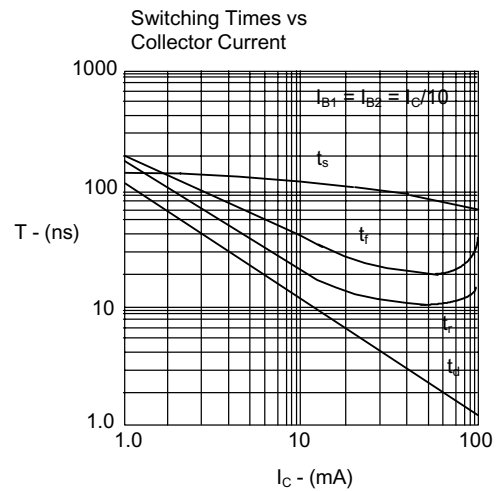
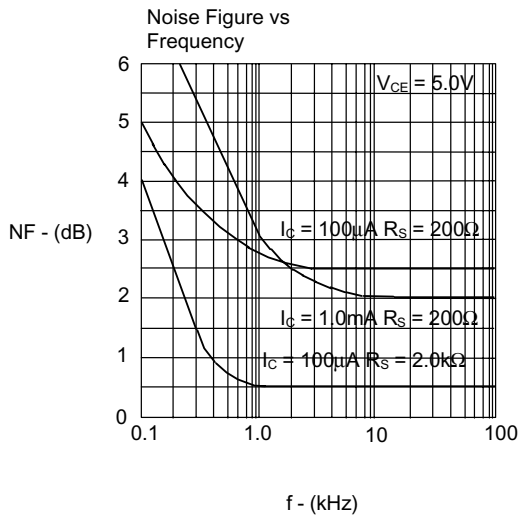
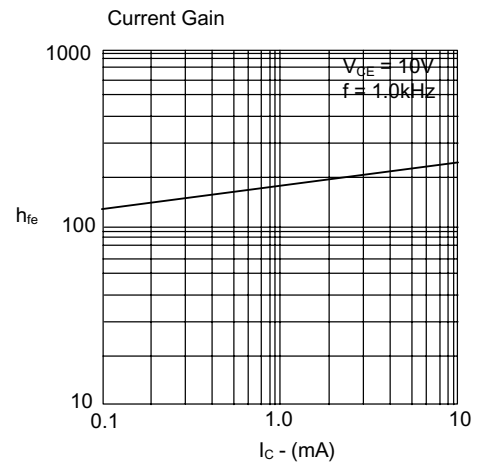
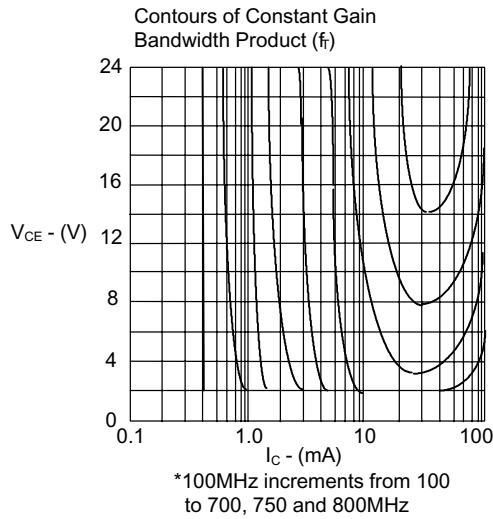
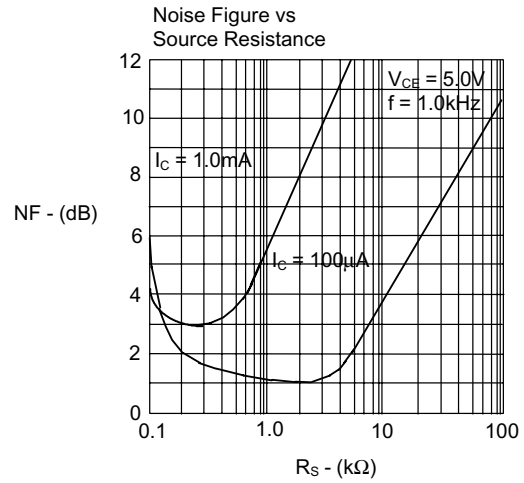
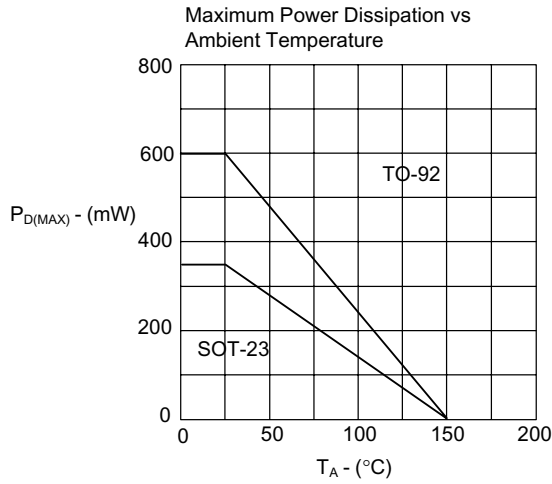
Collector-Base Diode Reverse Current vs Temperature



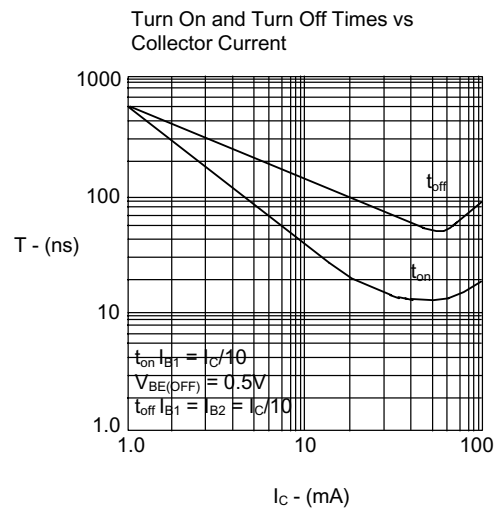
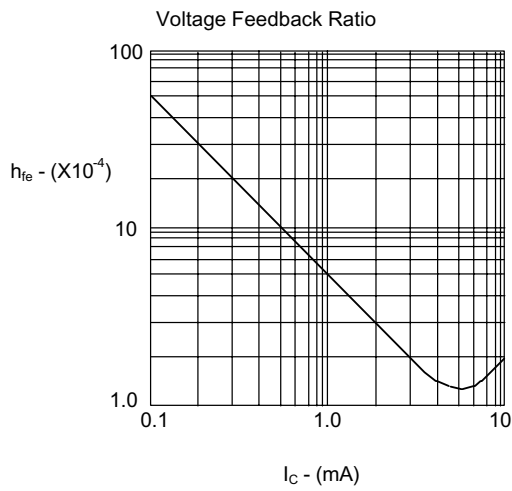
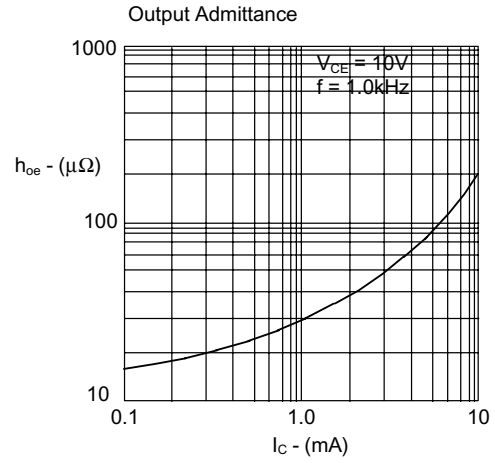
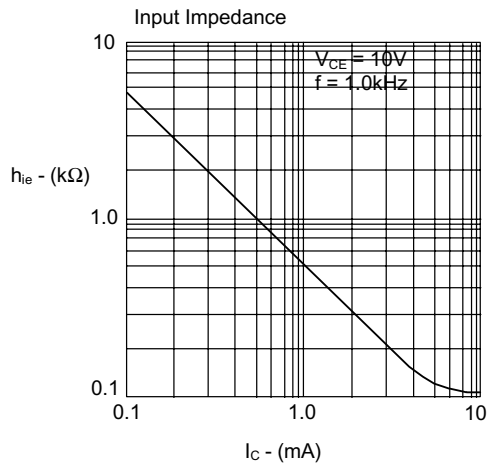
Common Base Open Circuit Input and Output Capacitance vs Reverse Bias Voltage



# 2N3906



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**Ordering Information :**

Device	Packing
Part Number-AP	Ammo Packing: 20Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

Note : Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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