

## Features

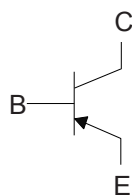
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-50	V
Collector-Emitter Voltage	$V_{CEO}$	-50	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Continuous Collector Current	$I_C$	-150	mA
Power Dissipation	$P_D$	200	mW

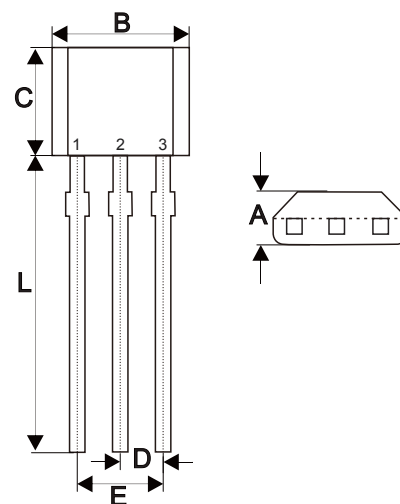
## Internal Structure



1.EMITTER  
2.COLLECTOR  
3.BASE

# PNP Plastic-Encapsulate Transistors

## TO-92S



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.056	0.064	1.42	1.62	
B	0.154	0.161	3.90	4.10	
C	0.120	0.128	3.05	3.25	
D	0.050		1.27		Straight Lead
	0.086	0.110	2.20	2.80	Bent Lead
E	0.096	0.104	2.44	2.64	Straight Lead
	0.173	0.220	4.40	5.60	Bent Lead
L	0.594	0.610	15.10	15.50	

**Electrical Characteristics @ T<sub>A</sub>=25°C Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	V <sub>(BR)CBO</sub>	-50			V	I <sub>C</sub> =-100μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	-50			V	I <sub>C</sub> =-1mA, I <sub>B</sub> =0
Emitter-Base Breakdown Voltage	V <sub>(BR)EBO</sub>	-5			V	I <sub>E</sub> =-100μA, I <sub>C</sub> =0
Collector-Base Cutoff Current	I <sub>CBO</sub>			-0.1	μA	V <sub>CB</sub> =-50V, I <sub>E</sub> =0
Emitter-Base Cutoff Current	I <sub>EBO</sub>			-0.1	μA	V <sub>EB</sub> =-5V, I <sub>C</sub> =0
DC Current Gain	h <sub>FE</sub>	120		400		V <sub>CE</sub> =-6V, I <sub>C</sub> =-2mA
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			-0.3	V	I <sub>C</sub> =-100mA, I <sub>B</sub> =-10mA
Transition Frequency	f <sub>T</sub>	80			MHz	V <sub>CE</sub> =-10V, I <sub>C</sub> =-1mA
Collector Output Capacitance	C <sub>ob</sub>			7	pF	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=1MHz
Noise Figure	N <sub>F</sub>			10	dB	V <sub>CE</sub> =-6V, I <sub>C</sub> =-0.1mA, f=1KHz, R <sub>g</sub> =10KΩ

**Classification of h<sub>FE</sub>**

Rank	Y	GR
Range	120-240	200-400

**Curve Characteristics**

Fig. 1 - Static Characteristics

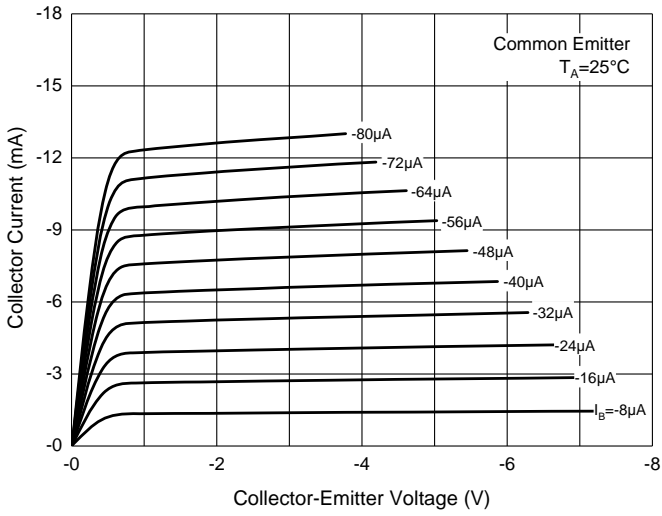


Fig. 2 - DC Current Gain Characteristics

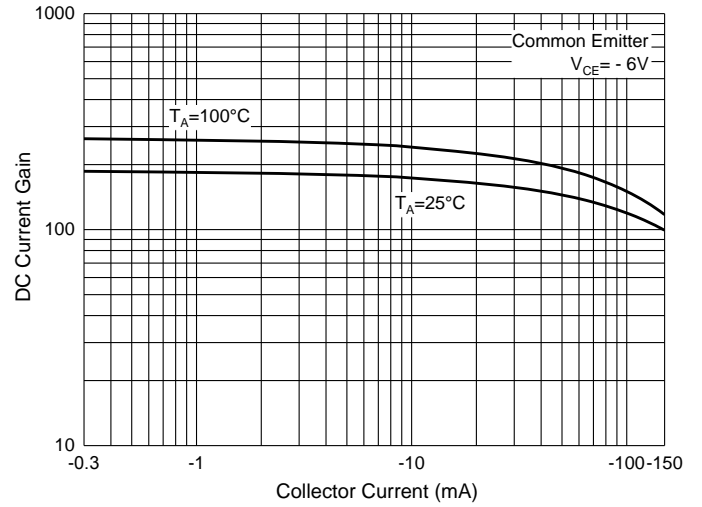


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

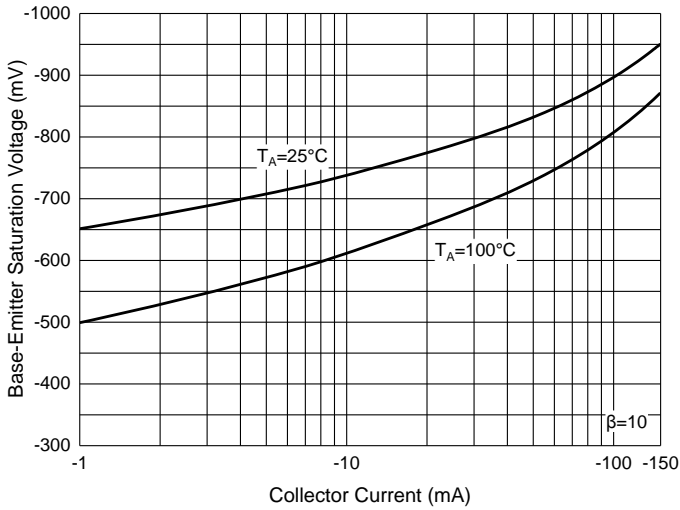


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

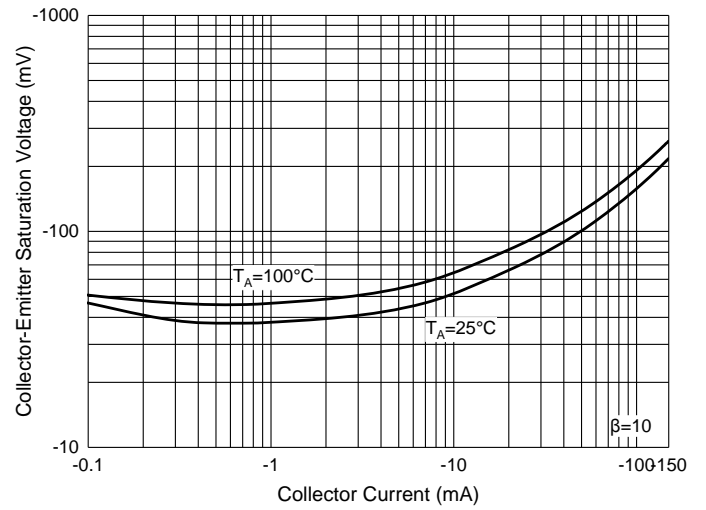


Fig. 5 - Base-Emitter Voltage Characteristics

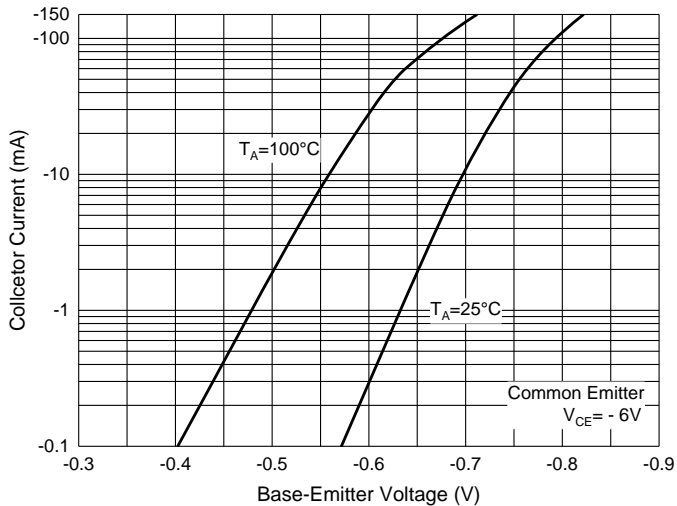
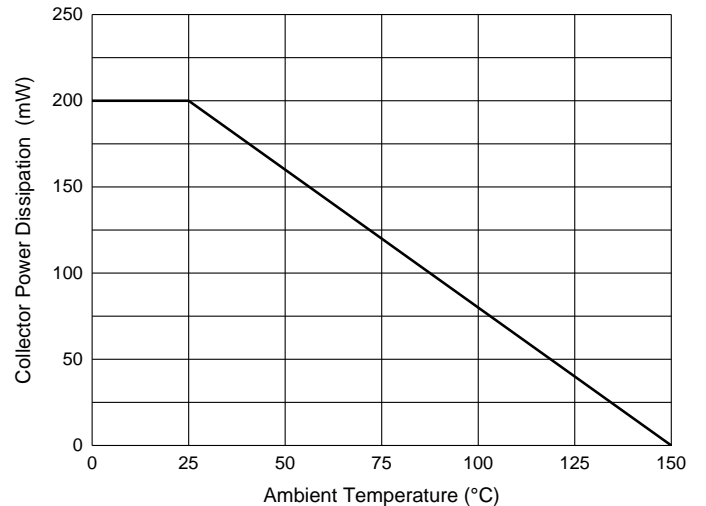


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-AP	Ammo Packing: 30Kpcs/Carton
Part Number-BP	Bulk: 100Kpcs/Carton

Note : Adding "-HF" Suffix for Halogen Free, eg. Part Number-TP-HF

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