

## Features

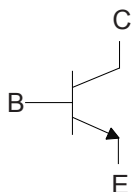
- Low Frequency Power Amplifier
- Complementary Pair with 2SB647/A
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## 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: 139°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	120	V
Collector-Emitter Voltage	$V_{CEO}$	80	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	1	A
Power Dissipation	$P_D$	900	mW

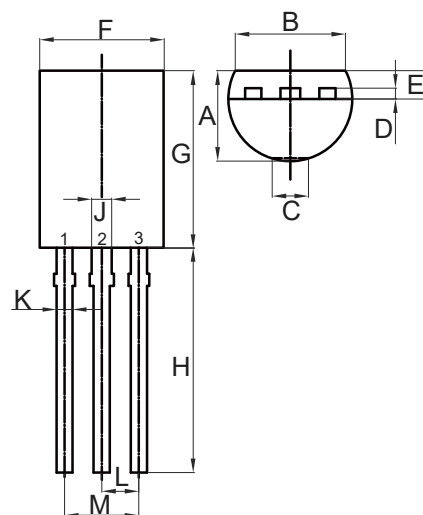
## Internal Structure



1.EMITTER  
2.COLLECTOR  
3.BASE

# NPN Plastic-Encapsulate Transistor

## TO-92L



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.146	0.161	3.70	4.10	
B	0.157	----	4.00	----	
C	0.000	0.063	0.00	1.60	
D	0.014	0.018	0.35	0.45	
E	0.050	0.062	1.28	1.58	
F	0.185	0.201	4.70	5.10	
G	0.307	0.323	7.80	8.20	
H	0.543	0.559	13.80	14.20	
J	0.024	0.031	0.60	0.80	
K	0.014	0.022	0.35	0.55	
L	0.050		1.27		Straight Lead
	0.086	0.110	2.20	2.80	Bent Lead
M	0.096	0.104	2.44	2.64	Straight Lead
	0.173	0.220	4.40	5.60	Bent Lead

**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>	120			V	I <sub>C</sub> =10μA, I <sub>E</sub> =0
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	80			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> =10μA, I <sub>C</sub> =0
Collector-Base Cutoff Current	I <sub>CBO</sub>			10	μA	V <sub>CB</sub> =100V, I <sub>E</sub> =0
Emitter-Base Cutoff Current	I <sub>EBO</sub>			10	μA	V <sub>EB</sub> =4V, I <sub>C</sub> =0
DC Current Gain	h <sub>FE(1)</sub>	60		320		V <sub>CE</sub> =5V, I <sub>C</sub> =150mA
	h <sub>FE(2)</sub>	30				V <sub>CE</sub> =5V, I <sub>C</sub> =-500mA
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>			1.0	V	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA
Base-Emitter Voltage	V <sub>BE</sub>			1.5	V	V <sub>CE</sub> =5V, I <sub>C</sub> =150mA
Transition Frequency	f <sub>T</sub>		140		MHz	V <sub>CE</sub> =5V, I <sub>C</sub> =150mA
Collector-Base Capacitance	C <sub>cb</sub>		12		pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz

**Classification of h<sub>FE(1)</sub>**

Rank	B	C	D
Range	60-120	100-200	160-320

**Curve Characteristics**

Fig. 1 - Static Characteristics

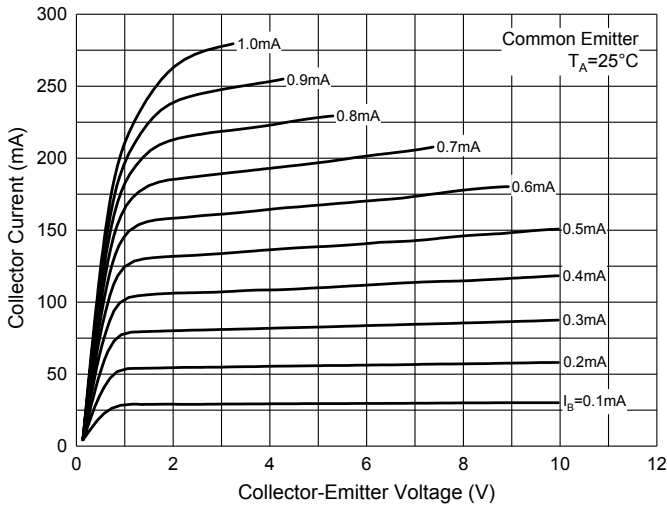


Fig. 2 - DC Current Gain Characteristics

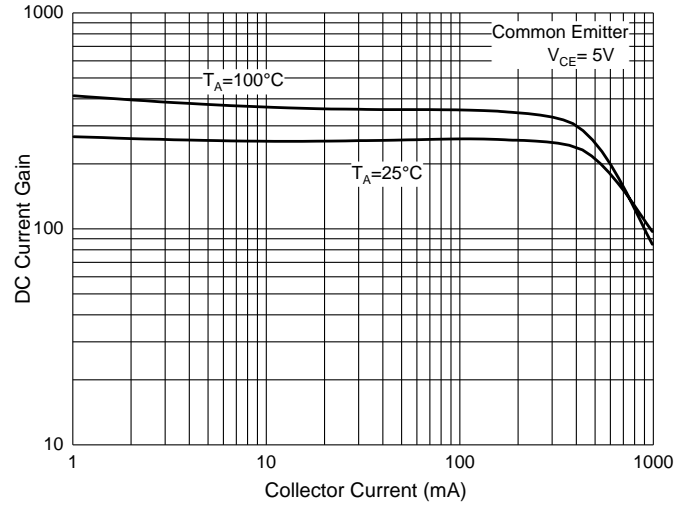


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

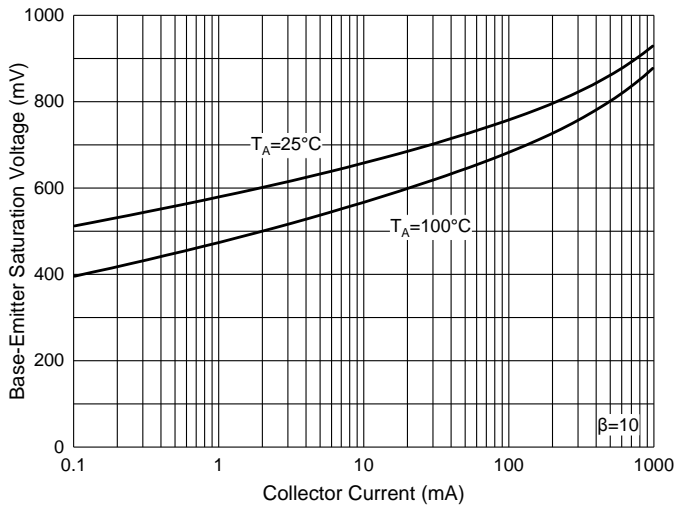


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

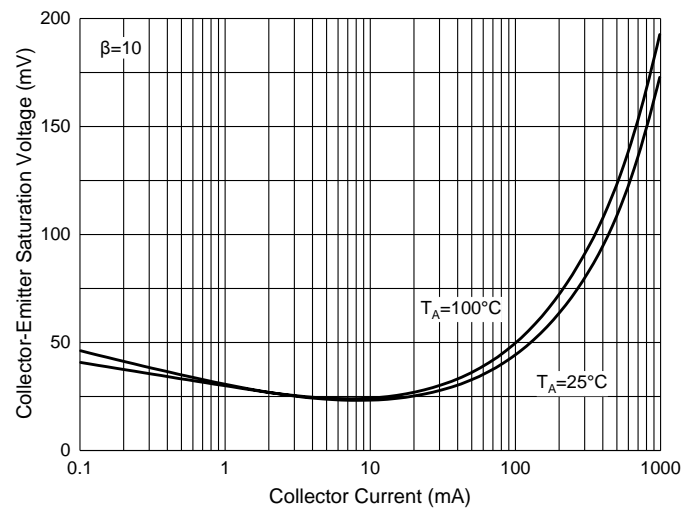


Fig. 5 - Base-Emitter Voltage Characteristics

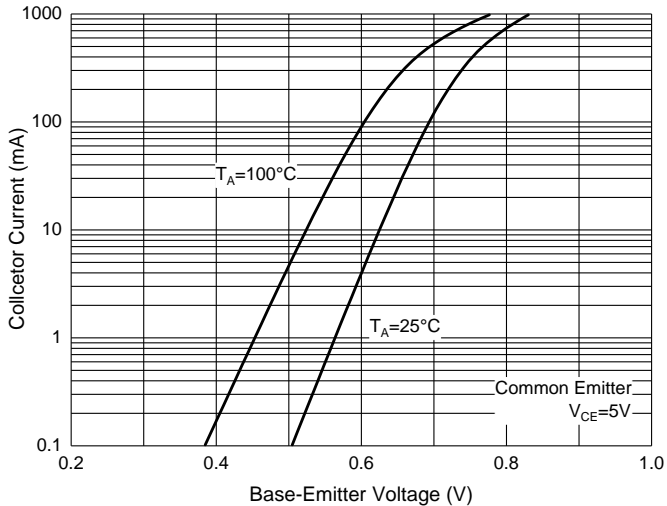
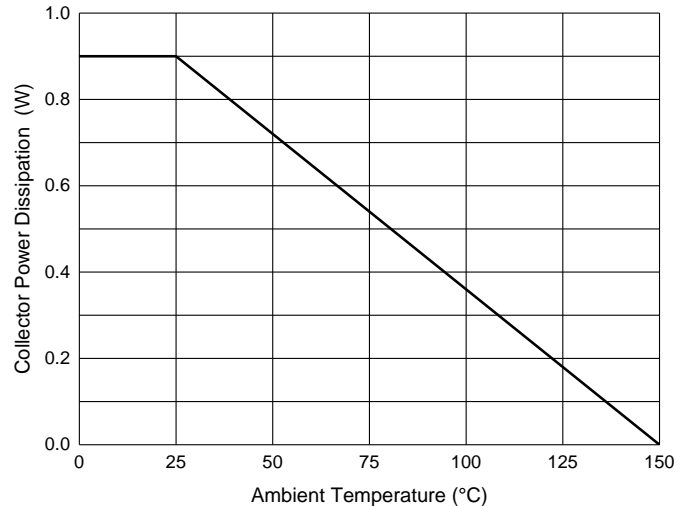


Fig. 6 - Collector Power Derating Curve



## Ordering Information

Device	Packing
Part Number-AP	Ammo Packing: 2Kpcs/Ammo Box
Part Number-BP	Bulk: 50Kpcs/Carton

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

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