



# TO-92 Plastic-Encapsulate Transistors

## 8050SS TRANSISTOR ( NPN )

### FEATURES

Power dissipation

$$P_{CM} : 1 \text{ W} \quad (T_{amb}=25)$$

Collector current

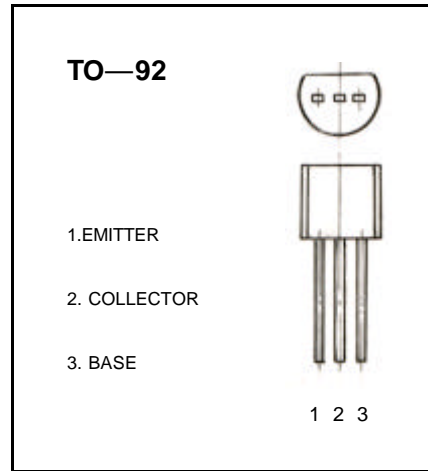
$$I_{CM} : 1.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 40 \text{ V}$$

Operating and storage junction temperature range

$$T_J, T_{stg} : -55 \text{ to } +150$$



### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25$ unless otherwise specified )

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100 \mu A, I_E = 0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 0.1 \text{ mA}, I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 100 \mu A, I_C = 0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 40 \text{ V}, I_E = 0$			0.1	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE} = 20 \text{ V}, I_B = 0$			0.1	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 5 \text{ V}, I_C = 0$			0.1	$\mu A$
DC current gain	$h_{FE(1)}$	$V_{CE} = 1 \text{ V}, I_C = 100 \text{ mA}$	85		300	
	$h_{FE(2)}$	$V_{CE} = 1 \text{ V}, I_C = 800 \text{ mA}$	40			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 800 \text{ mA}, I_B = 80 \text{ mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 800 \text{ mA}, I_B = 80 \text{ mA}$			1.2	V
Transition frequency	$f_T$	$V_{CE} = 10 \text{ V}, I_C = 50 \text{ mA}$ $f = 30 \text{ MHz}$	100			MHz

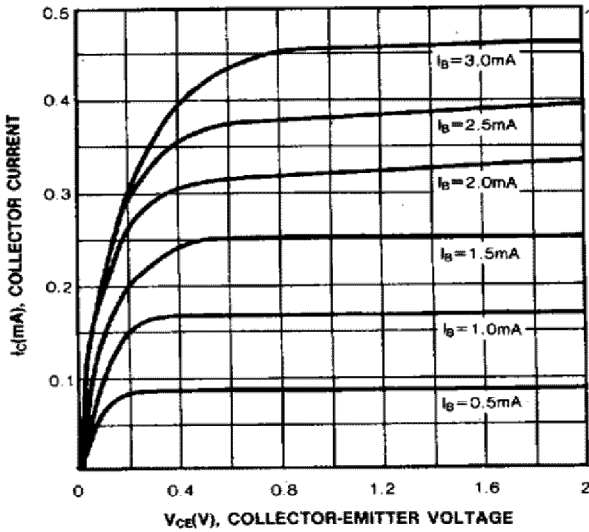
### CLASSIFICATION OF $h_{FE(1)}$

Rank	B	C	D
Range	85-160	120-200	160-300

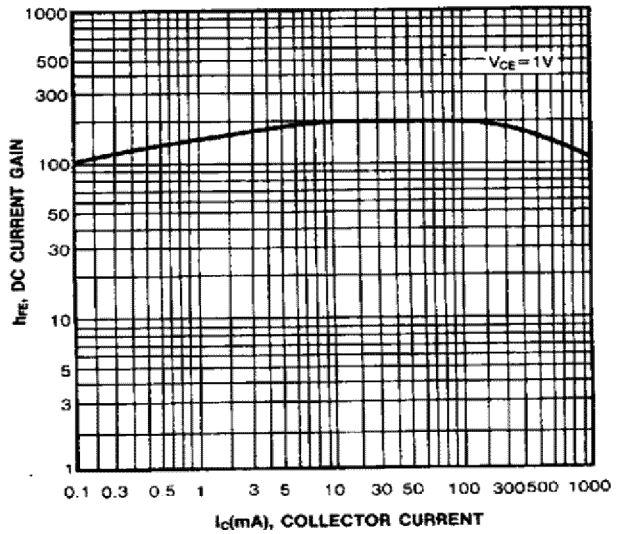
# Typical Characteristics

# 8050SS

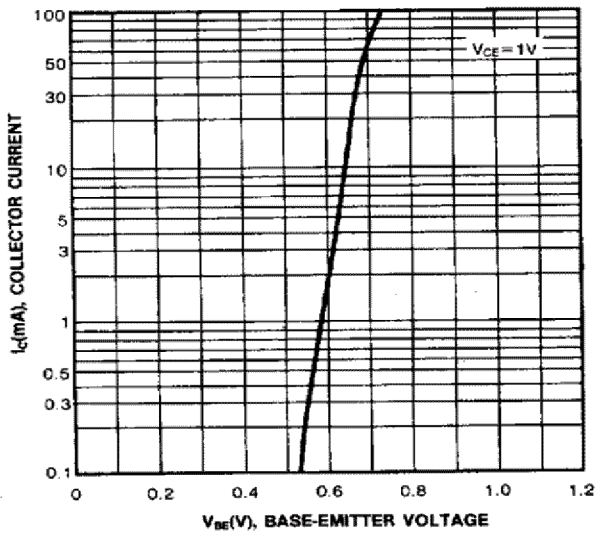
**STATIC CHARACTERISTIC**



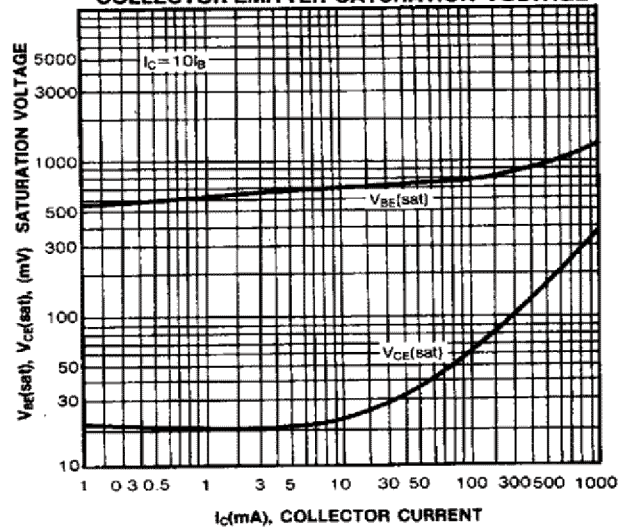
**DC CURRENT GAIN**



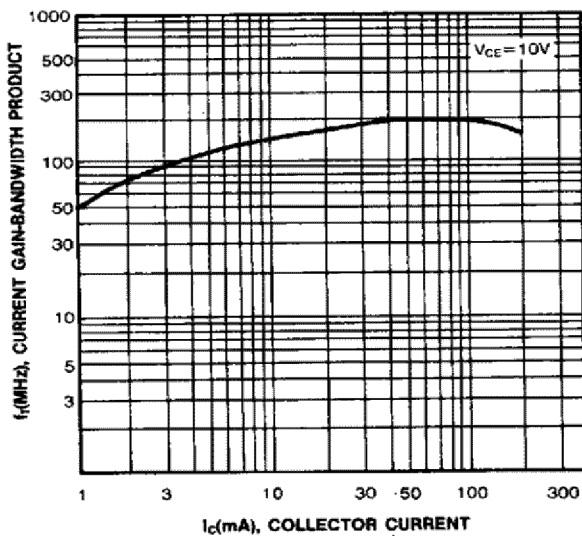
**BASE-EMITTER ON VOLTAGE**



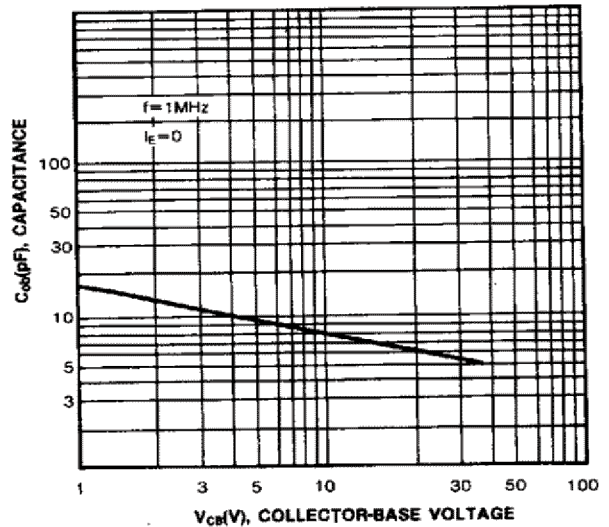
**BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE**



**CURRENT GAIN-BANDWIDTH PRODUCT**



**COLLECTOR OUTPUT CAPACITANCE**



## TO-92 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270TYP		0.050TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Ö		1.600		0.063
↓	0.000	0.380	0.000	0.015