



# DATA SHEET

SEMICONDUCTOR

SS8050

## TO-92 Plastic-Encapsulate Transistors



### FEATURES

TRANSISTOR (NPN)

#### Power dissipation

$P_{CM} : 1\text{ W}$  ( $T_A=25^\circ\text{C}$ )  
 $: 2\text{ W}$  ( $T_C=25^\circ\text{C}$ )

TO-92

1. EMITTER
2. BASE
3. COLLECTOR



### MAXIMUM RATINGS\* $T_A=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	40	V
$V_{CEO}$	Collector-Emitter Voltage	25	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	1500	mA
$T_J, T_{stg}$	Junction and Storage Temperature	-55-150	$^\circ\text{C}$

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=0.1\text{mA}, I_B=0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=40\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{CEO}$	$V_{CE}=20\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=1\text{V}, I_C=100\text{mA}$	85		400	
	$h_{FE(2)}$	$V_{CE}=1\text{V}, I_C=800\text{mA}$	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
Base-emitter voltage	$V_{BE}$	$V_{CE}=1\text{V}, I_C=10\text{mA}$			1	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=30\text{MHz}$	100			MHz

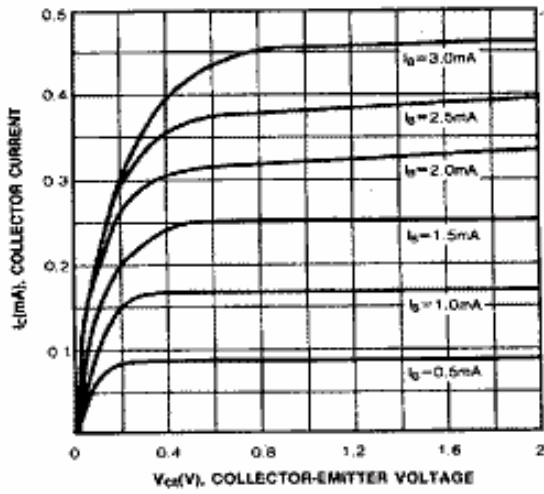
### CLASSIFICATION OF $h_{FE(2)}$

Rank	B	C	D	E
Range	85-160	120-200	160-300	300-400

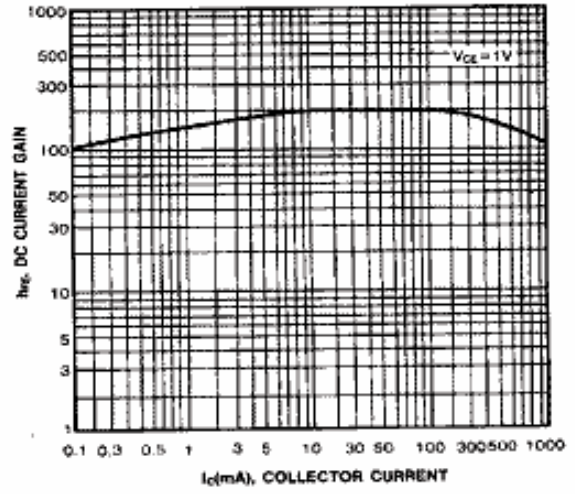
# DEVICE CHARACTERISTICS

SS8050

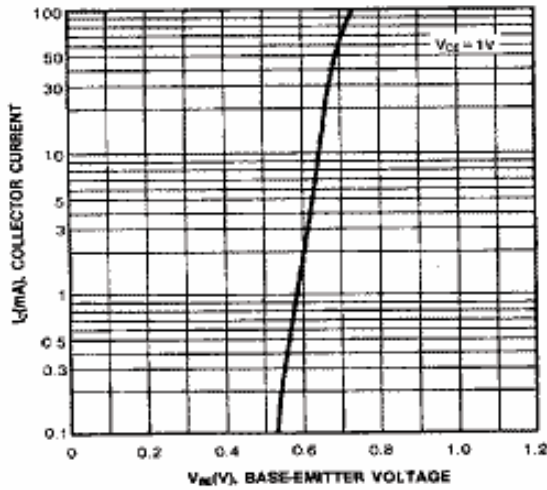
STATIC CHARACTERISTIC



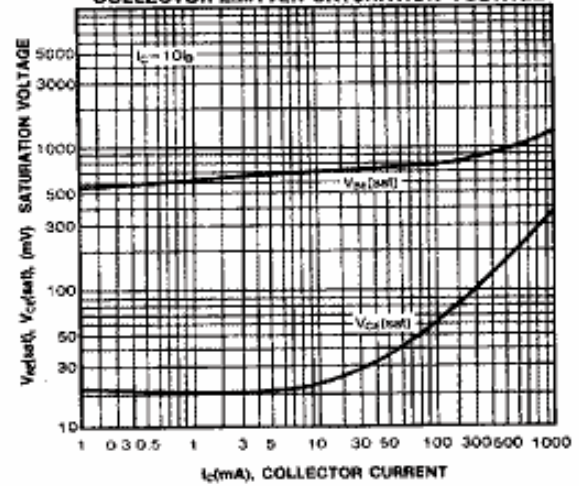
DC CURRENT GAIN



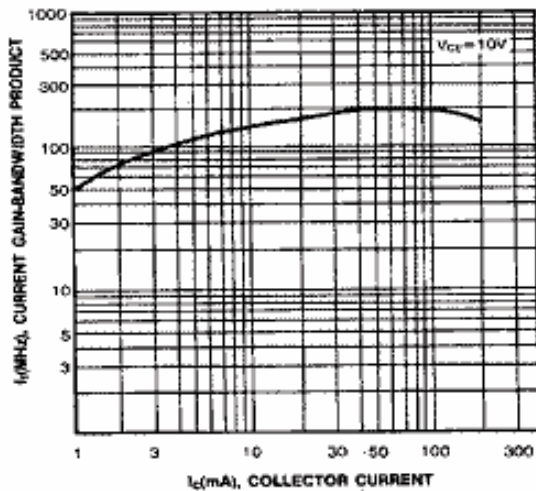
BASE-EMITTER ON VOLTAGE



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



CURRENT GAIN-BANDWIDTH PRODUCT



COLLECTOR OUTPUT CAPACITANCE

