

TO-92 Plastic-Encapsulate Transistors

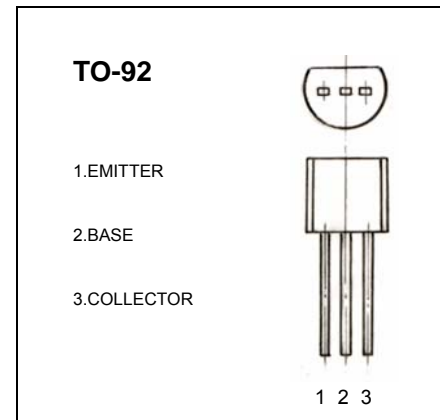
S8050 TRANSISTOR (NPN)

FEATURES

- Complimentary to S8550
- Collector current: $I_C=0.5A$

MAXIMUM RATINGS ($T_A=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{CB0}	Collector-Base Voltage	40	V
V_{CE0}	Collector-Emitter Voltage	25	V
V_{EB0}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	0.5	A
P_C	Collector Power Dissipation	0.625	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature	-55-150	$^\circ C$



ELECTRICAL CHARACTERISTICS ($T_{amb}=25^\circ C$ 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	$V_{(BR)CEO}$	$I_C=0.1mA, I_B=0$	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}	$V_{CB}=40V, I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE}=20V, I_B=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=1V, I_C=50mA$	85		400	
	$h_{FE(2)}$	$V_{CE}=1V, I_C=500mA$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=500mA, I_B=50mA$			1.2	V
Transition frequency	f_T	$V_{CE}=6V, I_C=20mA$ $f=30MHz$	150			MHz

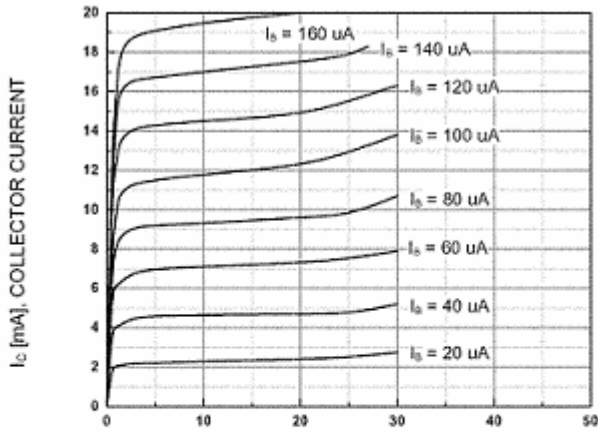
CLASSIFICATION OF $h_{FE(1)}$

Rank	B	C	D	D3
Range	85-160	120-200	160-300	300-400



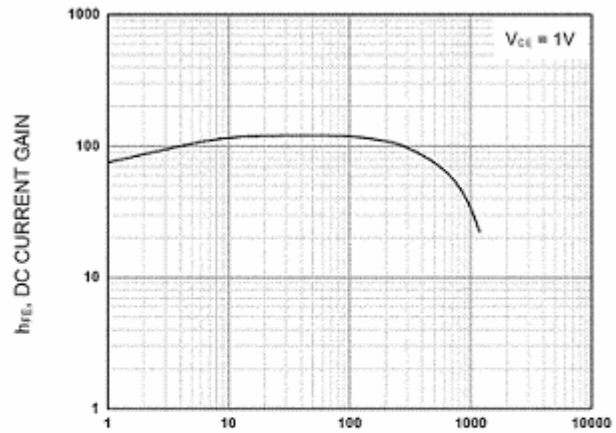
Typical Characteristics

S8050



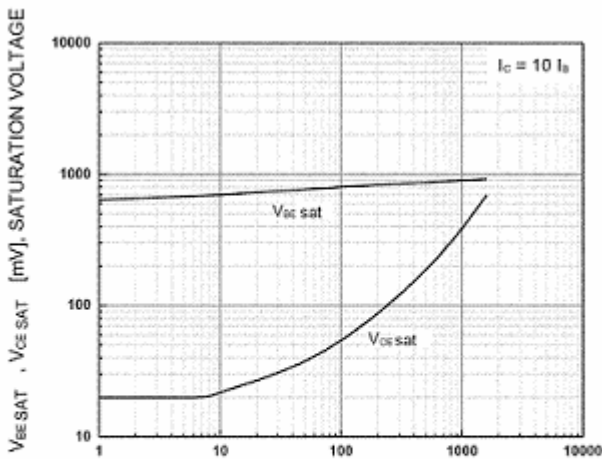
V_{CE} [V], COLLECTOR-EMITTER VOLTAGE

Static Characteristic



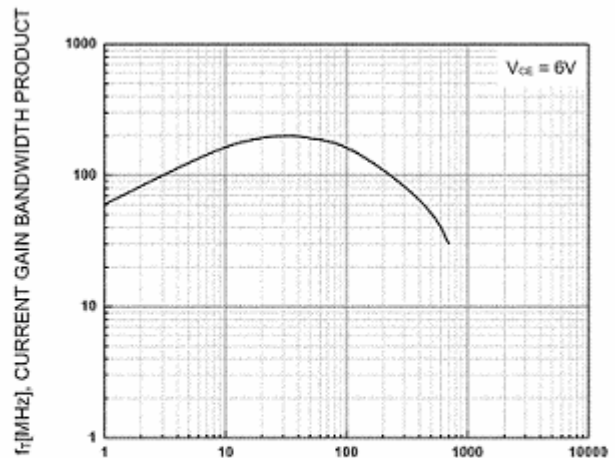
I_C [mA], COLLECTOR CURRENT

DC current Gain



I_C [mA], COLLECTOR CURRENT

Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



I_C [mA], COLLECTOR CURRENT

Current Gain Bandwidth Product