



TO-92 Plastic-Encapsulate Transistors

S8050 TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM} : 0.625 \text{ W (Tamb=25}^{\circ}\text{C)}$$

Collector current

$$I_{CM} : 0.5 \text{ A}$$

Collector-base voltage

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

Operating and storage junction temperature range

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

TO-92

1.EMITTER

2.BASE

3.COLLECTOR

1 2 3

ELECTRICAL CHARACTERISTICS (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CB}$	$I_C = 100 \mu\text{A}$, $I_E = 0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CE}$	$I_C = 0.1 \text{ mA}$, $I_B = 0$	25			V
Emitter-base breakdown voltage	$V_{(BR)EB}$	$I_E = 100 \mu\text{A}$, $I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CB} = 40 \text{ V}$, $I_E = 0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CE} = 20 \text{ V}$, $I_B = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -3 \text{ V}$, $I_C = 0$			0.1	μA
DC current gain	$H_{FE(1)}$	$V_{CE} = 1 \text{ V}$, $I_C = 50\text{mA}$	85		300	
	$H_{FE(2)}$	$V_{CE} = 1 \text{ V}$, $I_C = 500\text{mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$			1.2	V
Base-emitter voltage	V_{BE}	$I_E = 100\text{mA}$			1.4	V
Transition frequency	f_T	$V_{CE} = 6 \text{ V}$, $I_C = 20\text{mA}$ $f = 30\text{MHz}$	150			MHz

CLASSIFICATION OF $H_{FE(1)}$

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