



# TO-92 Plastic-Encapsulate Transistors

## S8050 TRANSISTOR ( NPN )

### FEATURES

Power dissipation

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

Collector current

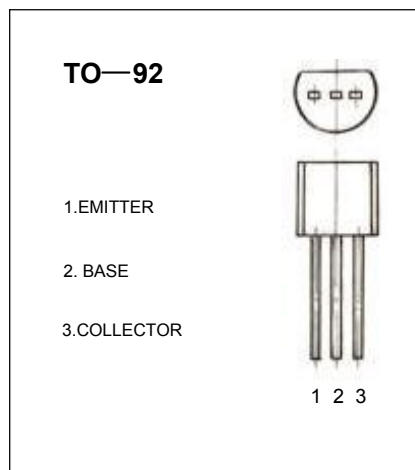
$$I_{CM}: 0.5 \text{ A}$$

Collector-base voltage

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

Operating and storage junction temperature range

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



### ELECTRICAL CHARACTERISTICS (Tamb=25°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	$V_{(BR)CEO}$	$I_C = 1 \text{ mA}, I_B = 0$	30			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	$\mu\text{A}$
Collector cut-off current	$I_{CEO}$	$V_{CE} = 30 \text{ V}, I_B = 0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 3 \text{ V}, I_C = 0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE} = 1 \text{ V}, I_C = 30 \text{ mA}$	70		400	
	$h_{FE(2)}$	$V_{CE} = 1 \text{ V}, I_C = 300 \text{ mA}$	50			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			1.2	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	70-140	120-240	200-400