

## TO-92 Plastic-Encapsulate Transistors

A42 TRANSISTOR ( NPN )

**FEATURES**

Power dissipation

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

Collector current

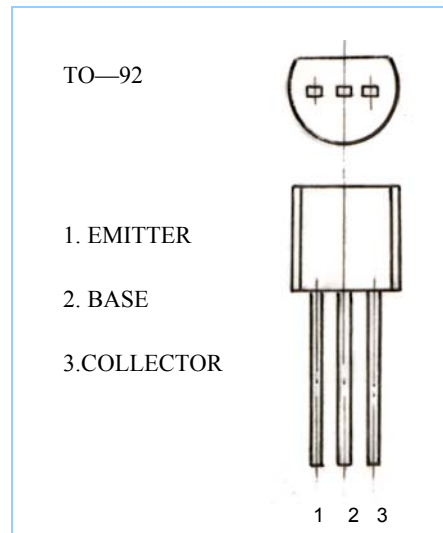
$$I_{CM} : 0.3 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : 300 \text{ V}$$

Operating and storage junction temperature range

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



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

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 100 \mu\text{A} , I_E = 0$	300		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 1 \text{ mA} , I_B = 0$	300		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10 \mu\text{A} , I_C = 0$	5		V
Collector cut-off current	$I_{CBO}$	$V_{CB} = 200 \text{ V} , I_E = 0$		0.25	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = 3 \text{ V} , I_C = 0$		0.25	$\mu\text{A}$
DC current gain	$H_{FE(1)}$	$V_{CE} = 10 \text{ V} , I_C = 1 \text{ mA}$	25		
	$H_{FE(2)}$	$V_{CE} = 10 \text{ V} , I_C = 10 \text{ mA}$	80	250	
	$H_{FE(3)}$	$V_{CE} = 10 \text{ V} , I_C = 50 \text{ mA}$	25		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20 \text{ mA} , I_B = 2 \text{ mA}$		0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20 \text{ mA} , I_B = 2 \text{ mA}$		0.9	V
Transition frequency	$f_T$	$V_{CE} = 5 \text{ V} , I_C = 10 \text{ mA}$ $f = 30 \text{ MHz}$	50		MHz

**CLASSIFICATION OF  $H_{FE(2)}$**

Rank	A	B <sub>1</sub>	B <sub>2</sub>	C
Range	80-100	100-150	150-200	200-250

Typical Characteristics

