



TO-92 Plastic-Encapsulate Transistors

2N3417 TRANSISTOR (NPN)

FEATURES

Power dissipation

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

Collector current

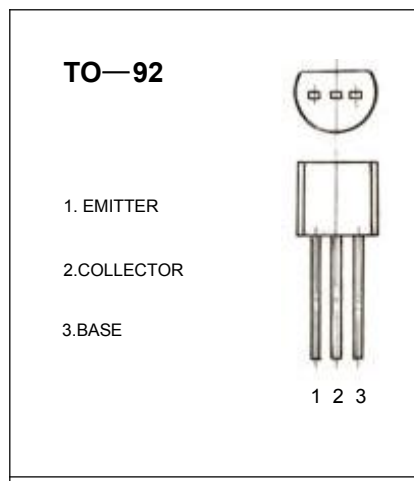
$$I_{CM}: 0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 50 \text{ V}$$

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	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\mu\text{A}, I_B=0$	50			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}	$V_{CB}=25\text{ V}, I_E=0$			100	μA
Collector cut-off current	I_{CEO}	$V_{CE}=18\text{ V}, I_E=0$			15	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=5\text{ V}, I_C=0$			100	μA
DC current gain	$H_{FE(1)}$	$V_{CE}=4.5\text{ V}, I_C=2\text{ mA}$	180		540	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50\text{ mA}, I_B=3\text{ mA}$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50\text{ mA}, I_B=3\text{ mA}$			1.3	V
Small-Signal Current Gain	h_{fe}	$V_{CE}=4.5\text{ V}, I_C=2\text{ mA}$ $f=1\text{ kHz}$	180			kHz

CLASSIFICATION OF HFE

Rank	1	2	3
Range	180-250	250-400	400-540