



TO-92MOD Plastic-Encapsulate Transistors

2SA1013 TRANSISTOR (PNP)

FEATURE

Power dissipation

$$P_{CM} : 0.9 \text{ W (Tamb=25}^{\circ}\text{C)}$$

Collector current

$$I_{CM} : -1\text{A}$$

Collector-base voltage

$$V_{(BR)CBO} : -160 \text{ V}$$

Operating and storage junction temperature range

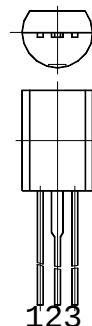
$$T_J, T_{stg} : -55^{\circ}\text{C to } +150^{\circ}\text{C}$$

TO-92MOD

1. EMITTER

2. COLLECTOR

3. BASE



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

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -100\mu\text{A}$, $I_E = 0$	-160		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -1 \text{ mA}$, $I_B = 0$	-160		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10 \text{ Ma}$, $I_C = 0$	-6		V
Collector cut-off current	I_{CBO}	$V_{CB} = -150 \text{ V}$, $I_E = 0$		-1	μA
Collector cut-off current	I_{CEO}	$V_{CE} = -120 \text{ V}$, $I_B = 0$		-10	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = -6\text{V}$, $I_C = 0$		-1	μA
DC current gain	$h_{FE(1)}$	$V_{CE} = -5 \text{ V}$, $I_C = -200\text{mA}$	65	310	
	$h_{FE(2)}$	$V_{CE} = -5\text{V}$, $I_C = -50\text{mA}$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -500 \text{ mA}$, $I_B = -50 \text{ mA}$		-1.5	V
Base-emitter voltage	V_{BE}	$I_C = -5 \text{ mA}$, $V_{CE} = -5\text{V}$		-0.75	V
Transition frequency	f_T	$V_{CE} = -5 \text{ V}$, $I_C = -200\text{mA}$ $f = 30\text{MHz}$	15		MHz

CLASSIFICATION OF $h_{FE(1)}$

Rank	R	O	Y
Range	60-120	120-200	200-300