



# DONGGUAN NANJING ELECTRONICS LTD.,

## TO-92 Plastic-Encapsulate Transistors

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### 2SA821 TRANSISTOR (PNP)

#### FEATURES

Power dissipation

$$P_{CM} : 0.25 \text{ W (Tamb=25}^\circ\text{C)}$$

Collector current

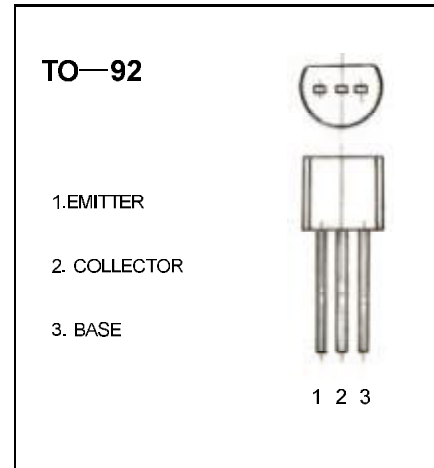
$$I_{CM} : -0.03 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO} : -210 \text{ V}$$

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	$V_{(BR)CBO}$	$I_C = -50 \mu\text{A}, I_E = 0$	-210			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -0.1 \text{ mA}, I_B = 0$	-210			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -50 \mu\text{A}, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -150\text{V}, I_E = 0$			-1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -4.5 \text{ V}, I_C = 0$			-1	$\mu\text{A}$
DC current gain	$h_{FE}$	$V_{CE} = -3 \text{ V}, I_C = -5 \text{ mA}$	56		270	
Collector-emitter saturation voltage	$V_{CEsat}$	$I_C = -2 \text{ mA}, I_B = -0.2 \text{ mA}$			-0.6	V
Transition frequency	$f_T$	$V_{CE} = -5 \text{ V}, I_C = -2 \text{ mA}$	30			MHz
Output capacitance	$C_{ob}$	$V_{CE} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			12	pF

#### CLASSIFICATION OF $h_{FE}$

Rank	N	P	Q
Range	56-120	82-180	120-270

# Typical Characteristics

# 2SA821

