



TO-92 Plastic-Encapsulate Transistors

S9011 TRANSISTOR (NPN)

FEATURES

Power dissipation

$$P_{CM}: 0.31 \text{ W (Tamb=25}^{\circ}\text{C)}$$

Collector current

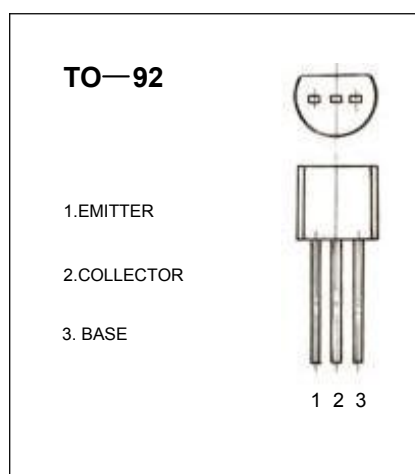
$$I_{CM}: 0.03 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 30 \text{ V}$$

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	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=0.1\text{mA}, I_B=0$	20			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	4			V
Collector cut-off current	I_{CBO}	$V_{CB}=16\text{V}, I_E=0$			0.1	μA
Collector cut-off current	I_{CEO}	$V_{CB}=16\text{V}, I_B=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=3.5\text{V}, I_C=0$			0.1	μA
DC current gain(note)	$H_{FE(1)}$	$V_{CE}=5\text{V}, I_C=1\text{mA}$	28		270	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$			0.3	V
Base-emitter voltage	V_{BE}	$I_E=10\text{mA}, I_B=1\text{mA}$			1	V
Transition frequency	f_T	$V_{CE}=5\text{V}, I_C=1\text{mA}$ $f=30\text{MHz}$	150			MHz

CLASSIFICATION OF

HFE

Rank	1	2	3
Range	28-45	97-146	180-270

