



TO-92 Plastic-Encapsulate Transistors

KSP93 TRANSISTOR (NPN)

FEATURES

Power dissipation

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

Collector current

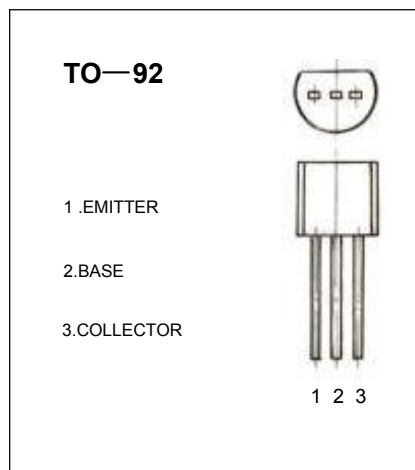
$$I_{CM}: 0.5 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 200 \text{ V}$$

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	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_B=0$	200			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	200			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5.0			V
Collector cut-off current	I_{CBO}	$V_{CB}=160\text{V}, I_E=0$			0.25	μA
Emitter cut-off current	I_{ESO}	$V_{EB}=3\text{V}, I_E=0$			0.1	μA
DC current gain(note)	$H_{FE(1)}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	25			
DC current gain(note)	$H_{FE(2)}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	40			
DC current gain(note)	$H_{FE(3)}$	$V_{CE}=10\text{V}, I_C=30\text{mA}$	25			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=20\text{mA}, I_B=2\text{mA}$			0.5	V
Base-emitter voltage	V_{BE}	$I_B=2\text{mA}, I_C=20\text{mA}$			0.9	V
Current Gain Bandwidth Product	f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	50			MHz

CLASSIFICATION OF HFE

Rank	1	2
Range	25-50	50-100