



# TO-92 Plastic-Encapsulate Transistors

## BC640 TRANSISTOR ( NPN )

### FEATURES

Power dissipation

$$P_{CM}: 0.83 \text{ W (Tamb=25}^\circ\text{C)}$$

Collector current

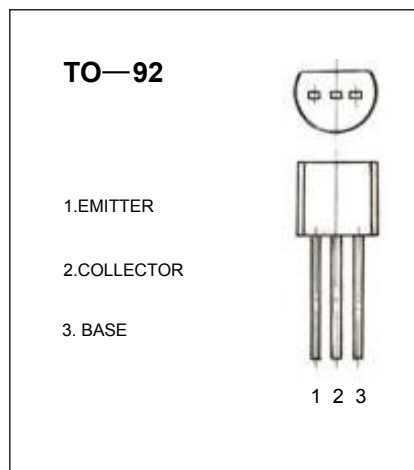
$$I_{CM}: 1.0 \text{ A}$$

Collector-base voltage

$$V_{(BR)CBO}: 80 \text{ V}$$

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	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	100			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	80			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			V
Collector cut-off current	$I_{CEO}$	$V_{CE}=30 \text{ V}, I_B=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=5 \text{ V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain(note)	$H_{FE(1)}$	$V_{CE}=2\text{V}, I_C=5\text{mA}$	40			
DC current gain(note)	$H_{FE(2)}$	$V_{CE}=2\text{V}, I_C=150\text{mA}$	63		250	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			0.5	V
Base-emitter voltage	$V_{BE}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$			1	V
Transition frequency	$f_T$	$V_{CE}=5\text{V}, I_C=50\text{mA}$ $f=100\text{MHz}$	100			MHz

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### ASSIFICATION OF

### HFE

Rank	1	2
Range	63-160	160-250