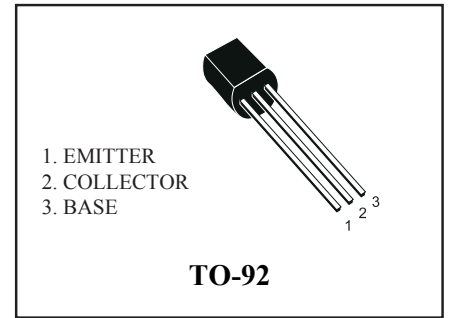
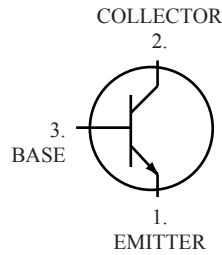


### NPN Transistor

**(Pb)** Lead(Pb)-Free



#### FEATURES :

- \* Audio amplifier
- \* Flash unit of camera
- \* Switching circuit

#### MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	$V_{\text{CBO}}$	42	V
Collector-Emitter Voltage	$V_{\text{CEO}}$	22	V
Emitter-Base Voltage	$V_{\text{EBO}}$	6	V
Collector Current -Continuous	$I_{\text{C}}$	5	A
Collector Power Dissipation	$P_{\text{C}}$	750	mW
Junction Temperature	$T_{\text{J}}$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-55-150	$^{\circ}\text{C}$

#### ELECTRICAL CHARACTERISTICS ( $T_{\text{amb}}=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(\text{BR})\text{CBO}}$	$I_{\text{C}}=0.1\text{mA}, I_{\text{E}}=0$	42			V
Collector-emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	$I_{\text{C}}=1\text{mA}, I_{\text{B}}=0$	22			V
Emitter-base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	$I_{\text{E}}=10\mu\text{A}, I_{\text{C}}=0$	6			V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}}=30\text{V}, I_{\text{E}}=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}}=6\text{V}, I_{\text{C}}=0$			0.1	$\mu\text{A}$
DC current gain	$h_{\text{FE}(1)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=0.15\text{mA}$	150			
	$h_{\text{FE}(2)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=500\text{mA}$	340		2000	
	$h_{\text{FE}(3)}$	$V_{\text{CE}}=2\text{V}, I_{\text{C}}=2\text{A}$	150			
Collector-emitter saturation voltage	$V_{\text{CE}(\text{sat})}$	$I_{\text{C}}=3000\text{mA}, I_{\text{B}}=100\text{mA}$			0.35	V
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}}=6\text{V}, I_{\text{C}}=50\text{mA}, f=30\text{MHz}$		150		MHz

#### CLASSIFICATION OF $h_{\text{FE}(2)}$

Rank	R	T	V
Range	340-600	560-950	900-2000

## Ratings and Characteristic Curves

Fig.1 Static characteristics

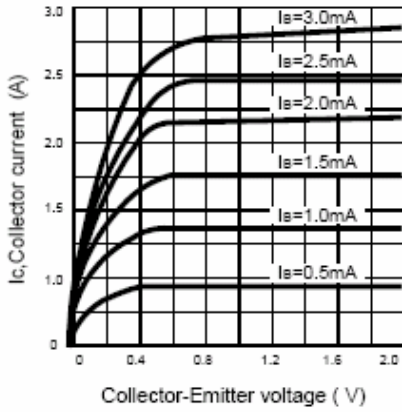


Fig.2 DC current Gain

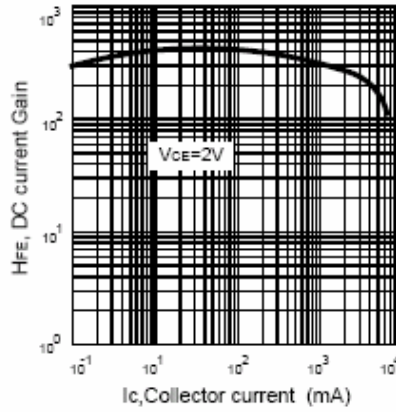


Fig.3 Base-Emitter on Voltage

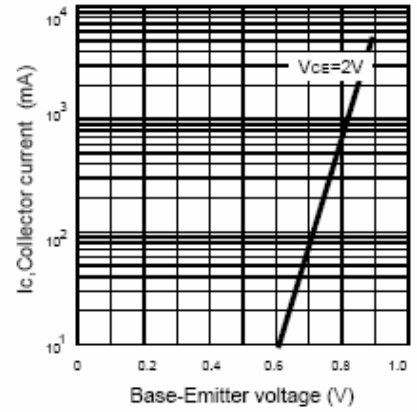


Fig.4 Saturation voltage

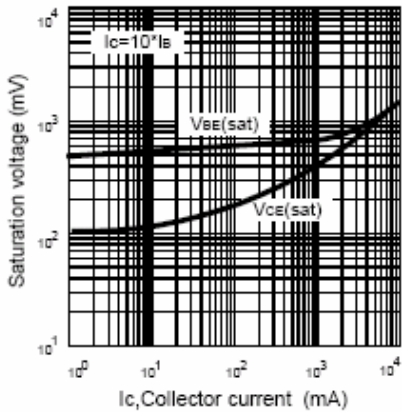


Fig.5 Current gain-bandwidth product

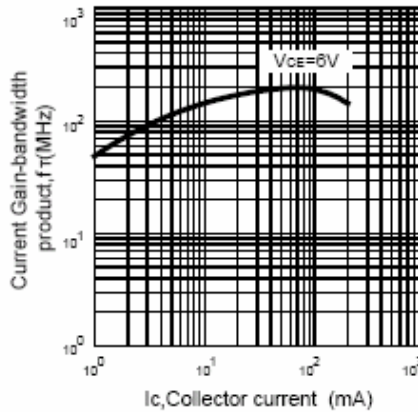


Fig.6 Collector output Capacitance

