



TO-92 Plastic-Encapsulate Transistors

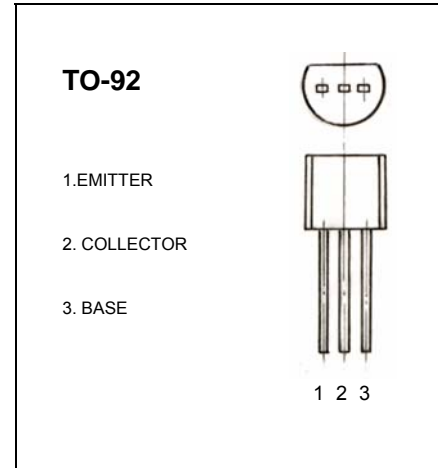
D965 TRANSISTOR (NPN)

FEATURES

- Audio amplifier
- Flash unit of camera
- Switching circuit

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

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



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

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

CLASSIFICATION OF $h_{FE(2)}$

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

Typical Characteristics

D965

Fig.1 Static characteristics

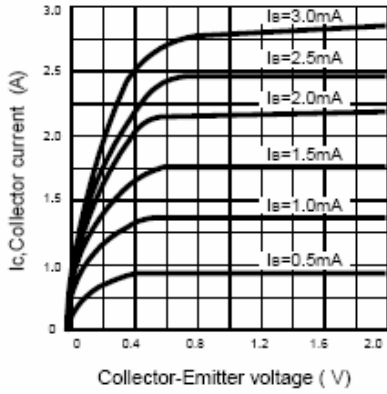


Fig.2 DC current Gain

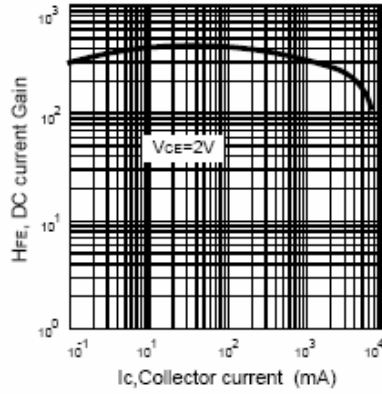


Fig.3 Base-Emitter on Voltage

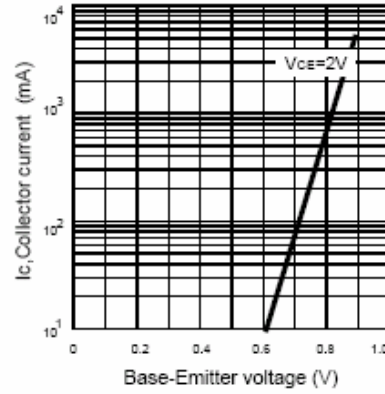


Fig.4 Saturation voltage

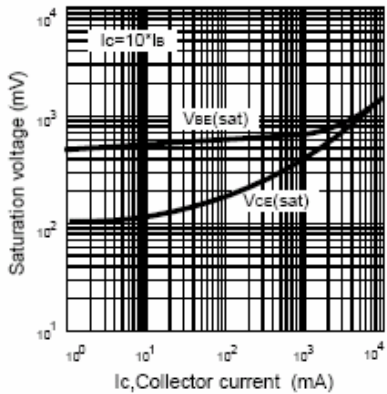


Fig.5 Current gain-bandwidth product

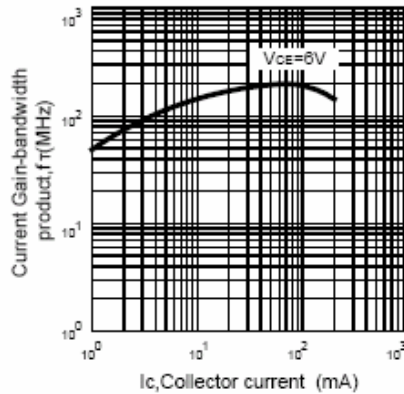


Fig.6 Collector output Capacitance

