

Transistors

2SA642

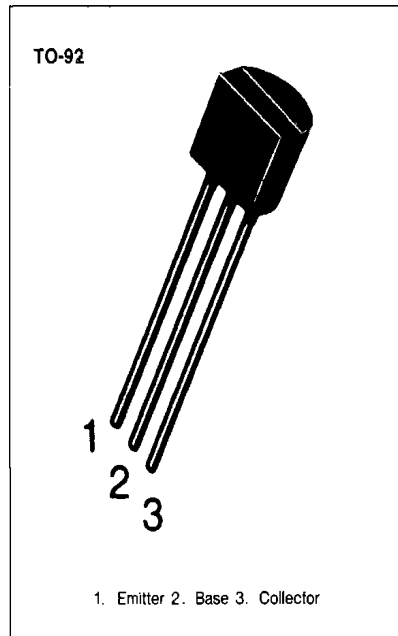
LOW FREQUENCY POWER AMPLIFIER

- Collector Dissipation $P_C=400\text{mW}$

ABSOLUTE MAXIMUM RATINGS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	- 30	V
Collector-Emitter Voltage	V_{CEO}	- 25	V
Emitter-Base Voltage	V_{EBO}	- 5	V
Collector Current (DC)	I_C (DC)	- 300	mA
Collector Current (pulse)	I_C (pulse)*	- 500	mA
Collector Dissipation	P_C	400	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ\text{C}$

* $PW \leq 10\text{ms}$, duty cycle $\leq 50\%$



ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -100\mu\text{A}$, $I_E = 0$	- 30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -10\text{mA}$, $I_B = 0$	- 25			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu\text{A}$, $I_C = 0$	- 5			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -25\text{V}$, $I_E = 0$			- 100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -3\text{V}$, $I_C = 0$			- 100	nA
DC Current Gain	h_{FE}	$V_{CE} = -1\text{V}$, $I_C = -50\text{mA}^*$	70		400	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -300\text{mA}$, $I_B = -30\text{mA}^*$		- 0.35	- 0.6	V

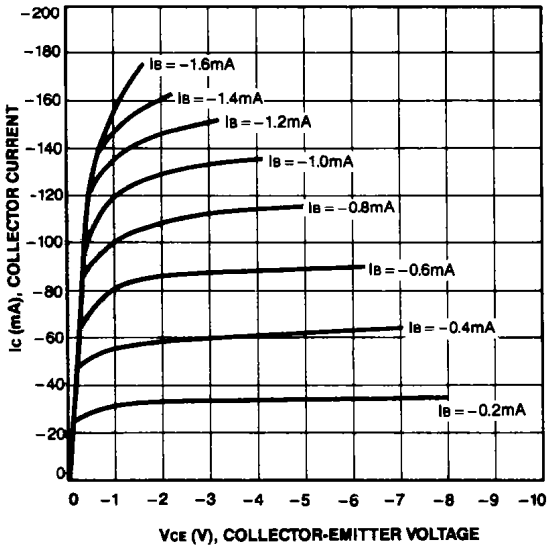
* Pulse Test: $PW \leq 350\mu\text{s}$, duty cycle $\leq 2\%$

h_{FE} CLASSIFICATION

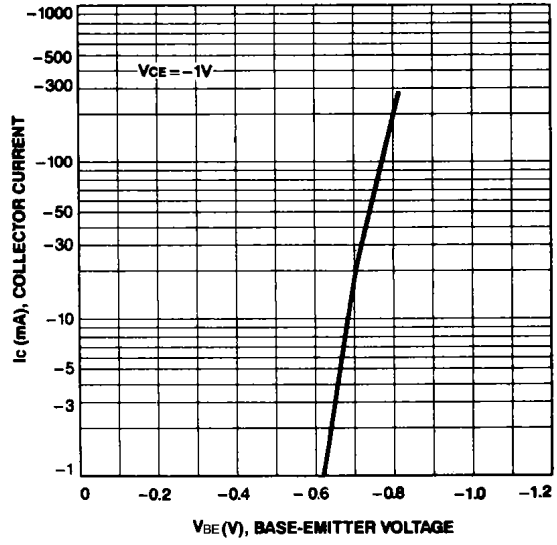
Classification	O	Y	G
h_{FE}	70-140	120-240	200-400



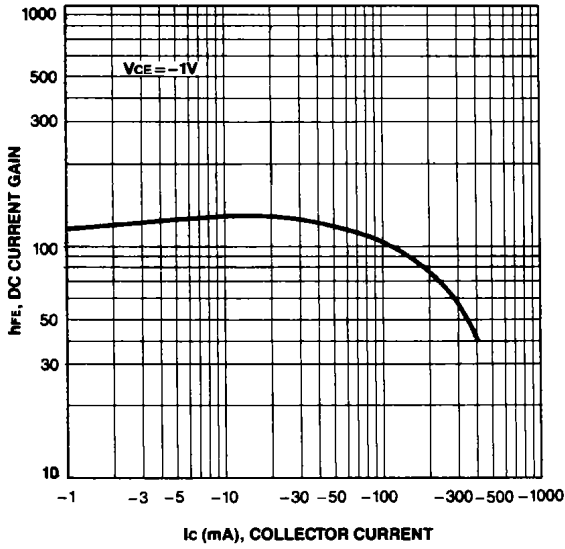
STATIC CHARACTERISTIC



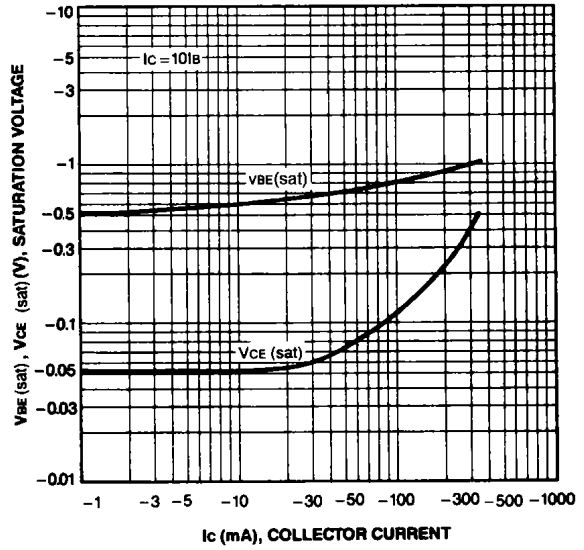
BASE-EMITTER ON VOLTAGE



DC CURRENT GAIN



**BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE**



COLLECTOR OUTPUT CAPACITANCE

