

Transistors

2SA643



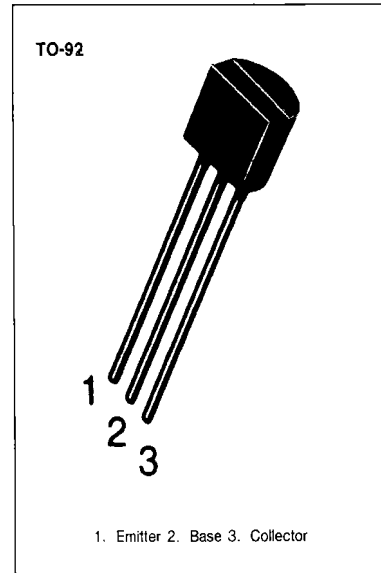
LOW FREQUENCY POWER AMPLIFIER

- Collector Dissipation $P_C = 500\text{mW}$

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	- 40	V
Collector-Emitter Voltage	V_{CEO}	- 20	V
Emitter-Base Voltage	V_{EBO}	- 5	V
Collector Current (DC)	I_C (DC)	- 500	mA
Collector Current (pulse)*	I_C (pulse)*	- 700	mA
Collector Dissipation	P_C	500	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}	$I_C = -100\mu\text{A}$, $I_E = 0$	- 40			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -10\text{mA}$, $I_B = 0$	- 20			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -100\mu\text{A}$, $I_C = 0$	- 5			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -25\text{V}$, $I_E = 0$			- 200	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -3\text{V}$, $I_C = 0$			- 200	nA
DC Current Gain	h_{FE}	$V_{CE} = -1\text{V}$, $I_C = -100\text{mA}^*$	40		400	
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = -500\text{mA}$, $I_B = -50\text{mA}^*$		- 0.3	- 0.4	V
Base-Emitter Saturation Voltage	$V_{BE}(\text{sat})$	$I_C = -500\text{mA}$, $I_B = -50\text{mA}^*$		- 1.0	- 1.3	V

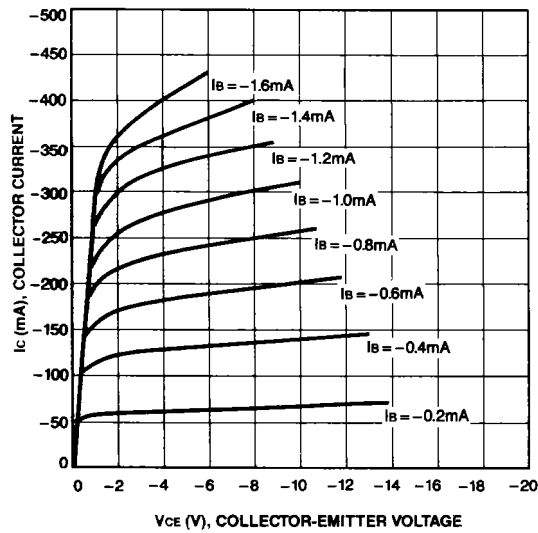
* Pulse Test: $PW = 350\mu\text{s}$, duty cycle = 2%

h_{FE} CLASSIFICATION

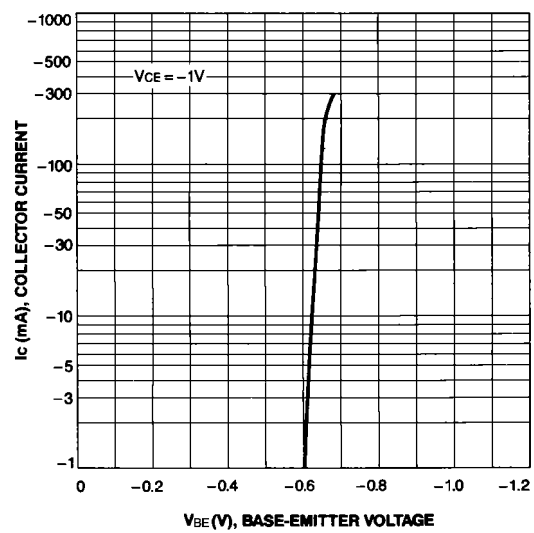
Classification	R	O	Y	G
h_{FE}	40-80	70-140	120-240	200-400



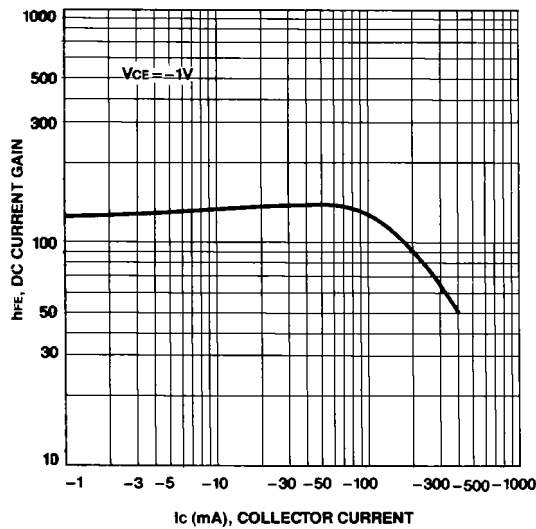
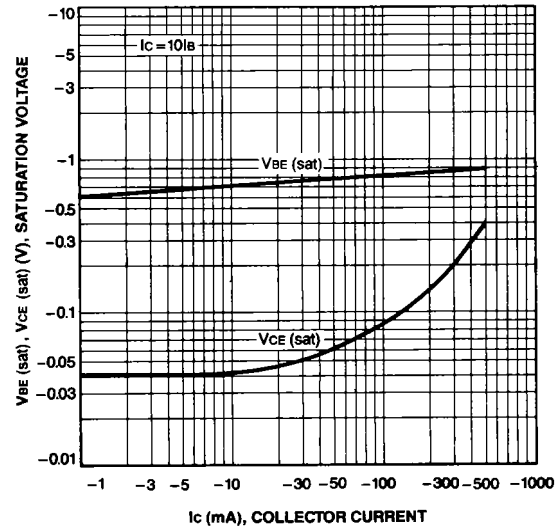
STATIC CHARACTERISTIC



BASE-EMITTER ON VOLTAGE



DC CURRENT GAIN

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

COLLECTOR OUTPUT CAPACITANCE

