

Transistors

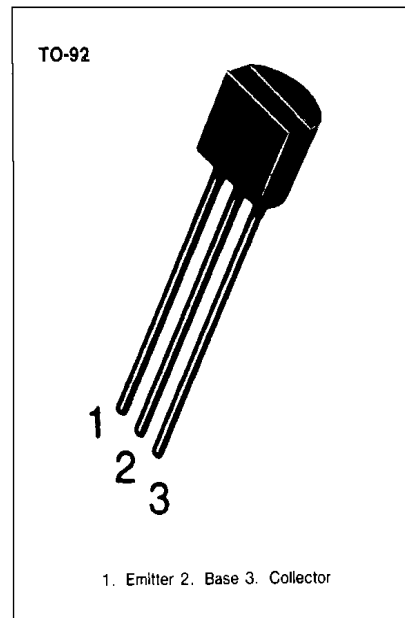
2SA542

LOW FREQUENCY AMPLIFIER

- Collector-Base Voltage $V_{CBO} = -30V$
- Low Collector-Emitter Saturation Voltage $V_{CE(sat)} = -0.15V$ (TYP)

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

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	I_C	-50	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ C$



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

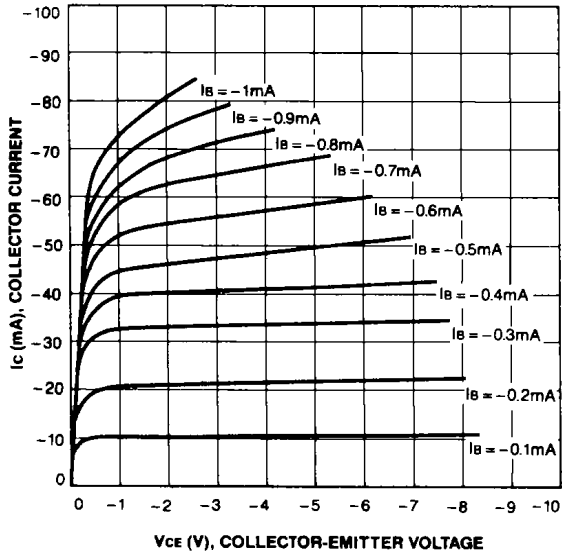
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C = -100\mu A, I_E = 0$	-30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = -10mA, I_B = 0$	-25			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu A, I_C = 0$	-5			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = -25V, I_E = 0$			-100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = -3V, I_C = 0$			-100	nA
DC Current Gain	h_{FE}	$V_{CE} = -6V, I_C = -1mA$	40		400	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = -20mA, I_B = -2mA$		-0.15	-0.3	V
Base-Emitter On Voltage	$V_{BE(on)}$	$V_{CE} = -6V, I_C = -1mA$		-0.65	-1.0	V
Current Gain-Bandwidth Product	f_T	$V_{CE} = -6V, I_C = -1mA$		100		MHz
Output Capacitance	C_{ob}	$V_{CB} = -6V, I_E = 0$ $f = 1MHz$		2.5		pF

h_{FE} CLASSIFICATION

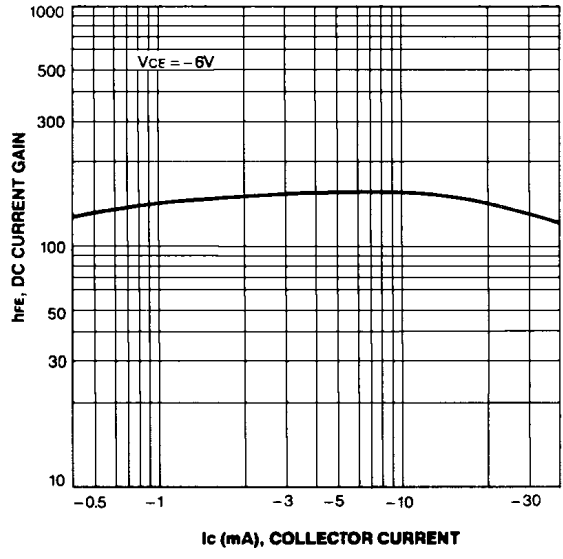
Classification	R	O	Y	G
h_{FE}	40-80	70-140	120-240	200-400



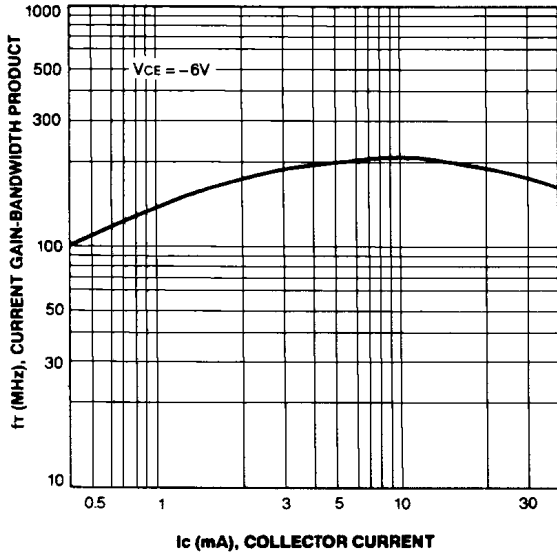
STATIC CHARACTERISTIC



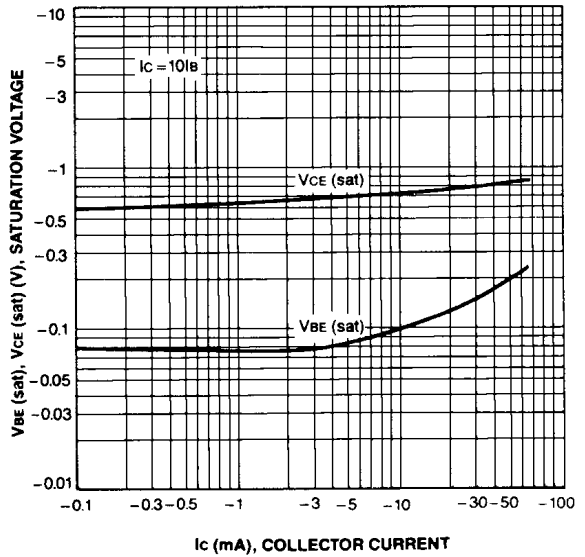
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT



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



COLLECTOR OUTPUT CAPACITANCE

