

SAMSUNG SEMICONDUCTOR INC.

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17-31-17

KSC184

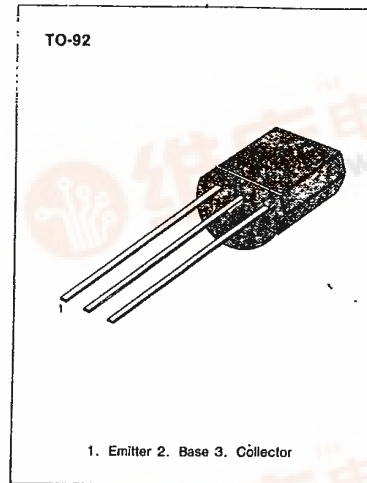
NPN EPITAXIAL SILICON TRANSISTOR

AM FREQUENCY CONVERTER IF AMPLIFIER

- Current Gain Bandwidth Product $f_T = 100\text{MHz}$ (Typ)
- Complement to KSA542

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	30	V
Collector-Emitter Voltage	V_{CE0}	25	V
Emitter-Base Voltage	V_{EB0}	5	V
Collector Current	I_C	50	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ\text{C}$



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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C = 100\mu\text{A}, I_E = 0$	30			V
Collector-Emitter Breakdown Voltage	BV_{CE0}	$I_C = 10\text{mA}, I_B = 0$	25			V
Emitter-Base Breakdown Voltage	BV_{EB0}	$I_E = -10\mu\text{A}, I_C = 0$	5			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 25\text{V}, I_E = 0$			0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$	40		1000	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.1	0.2	V
Current Gain-Bandwidth Product	f_T	$V_{CE} = 6\text{V}, I_C = 1\text{mA}$		100		MHz
Output Capacitance	C_{ob}	$V_{CB} = 6\text{V}, I_E = 0$ $f = 1\text{MHz}$		2.6	4.4	pF

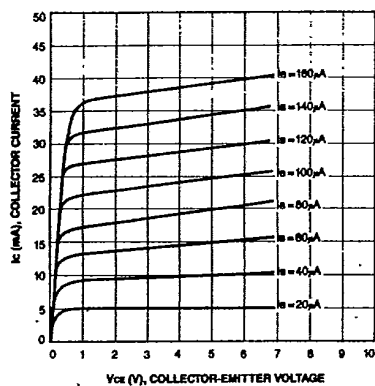
h_{FE} CLASSIFICATION

Classification	R	O	Y	G	L
h_{FE}	40-80	70-140	120-240	200-400	350-700

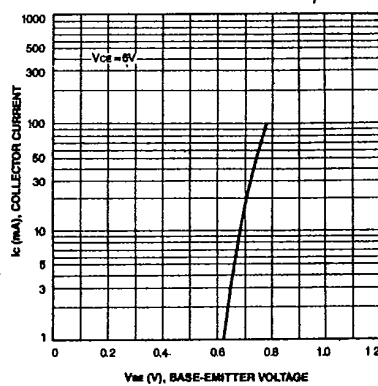


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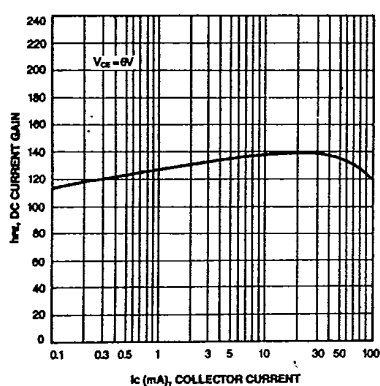
STATIC CHARACTERISTIC



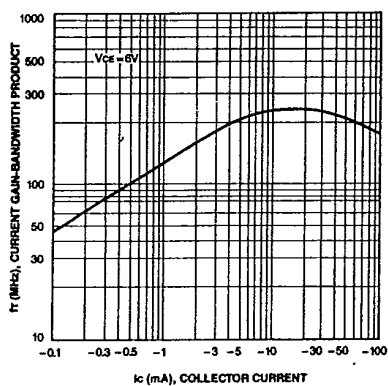
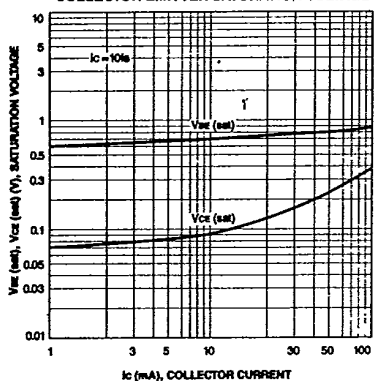
BASE-EMITTER ON VOLTAGE



DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

COLLECTOR OUTPUT CAPACITANCE

