

SAMSUNG SEMICONDUCTOR INC

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KSC1188

NPN EPITAXIAL SILICON TRANSISTOR

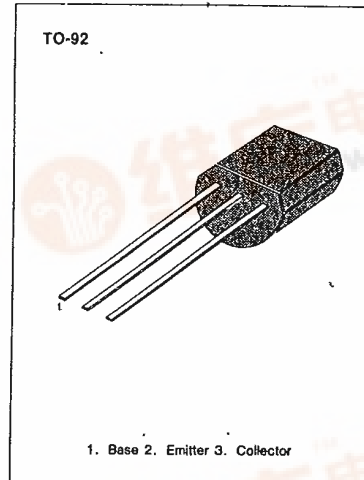
T-31-17

TV PIF AMPLIFIER

- High Current Gain Bandwidth Product $f_T = 700\text{MHz}$
- High Power Gain $G_{pe} = 25\text{dB}$ at 45MHz (Min)

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}	20	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	30	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_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	30			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 5\text{mA}, I_B = 0$	20			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu\text{A}, I_C = 0$	4			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 20\text{V}, I_E = 0$			0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 3\text{V}, I_C = 0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 2\text{mA}$	40		240	
Current Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 3\text{mA}$	400	700		MHz
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.2	0.7	V
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$			1	pF
Power Gain	G_{pe}	$I_C = 10\text{mA}, V_{CE} = 6\text{V}$ $f = 45\text{MHz}, R_S = 50\Omega$	20	24		dB

 h_{FE} CLASSIFICATION

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



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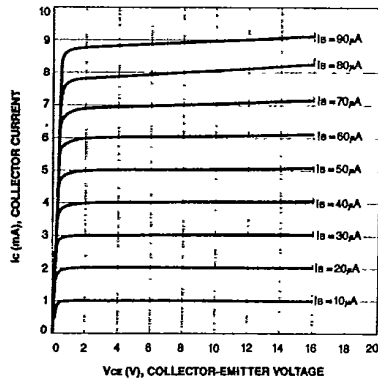
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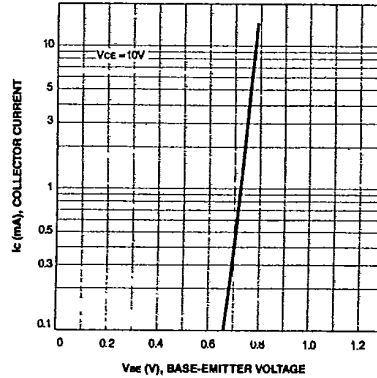
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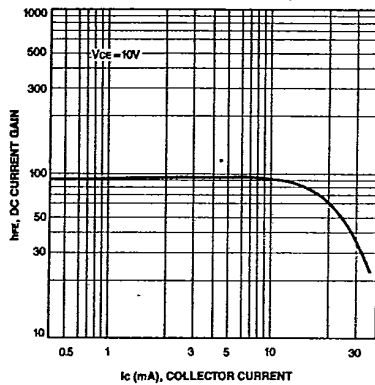
STATIC CHARACTERISTIC



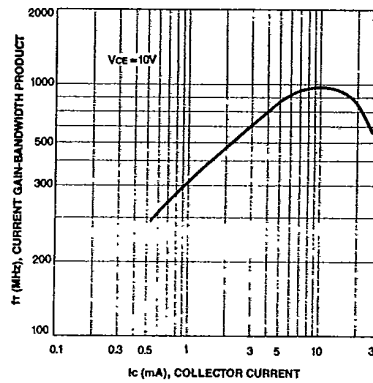
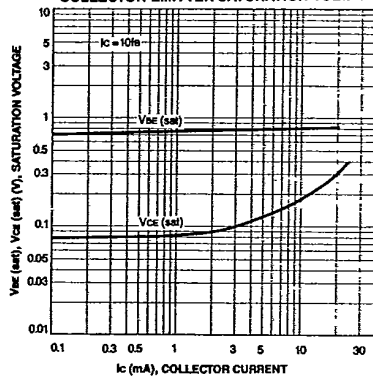
BASE-EMITTER ON VOLTAGE



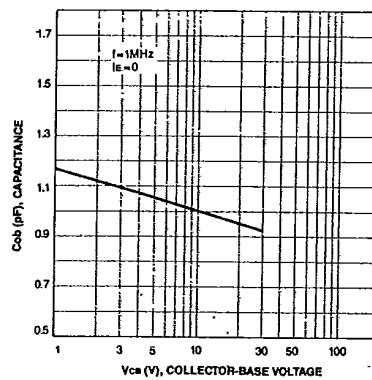
DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

COLLECTOR OUTPUT CAPACITANCE



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