

KSC1730

NPN EPITAXIAL SILICON TRANSISTOR

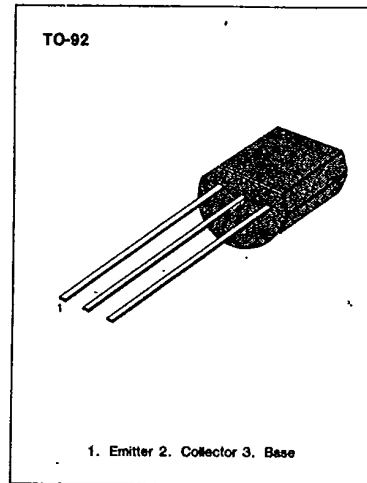
T-31-17

TV VHF, UHF TUNER OSCILLATOR

- High Current Gain Bandwidth Product $f_T = 1100\text{MHz}$ (Typ)
- Output Capacitance $C_{ob} = 1.5\text{pF}$ (Max)

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}	15	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	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ\text{C}$



3

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}	$I_C = 5\text{mA}, I_B = 0$	15			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E = -10\mu\text{A}, I_C = 0$	5			V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 12\text{V}, I_E = 0$			0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 5.0\text{mA}$	40		240	
Collector-Emitter Saturation Voltage	$V_{CE}(\text{sat})$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.5	V
Current Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 5\text{mA}$	800	1100		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$ $I_E = 0$			1.5	pF
Collector-Base Time Constant	$C_C \cdot r_{bb'}$	$V_{CE} = 10\text{V}, f = 31.9\text{MHz}$ $I_E = -0.5\text{mA}$		10	20	ps

 h_{FE} CLASSIFICATION

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

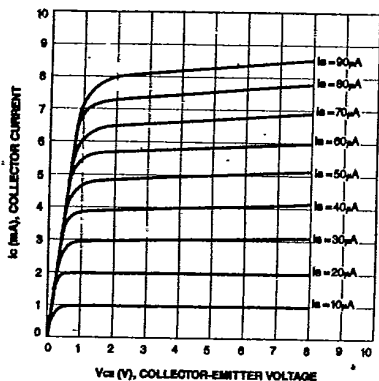


KSC1730

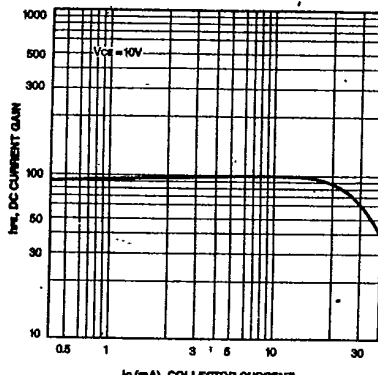
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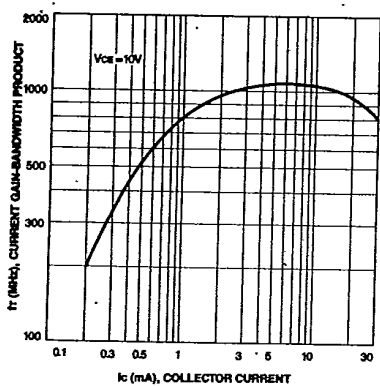
STATIC CHARACTERISTIC



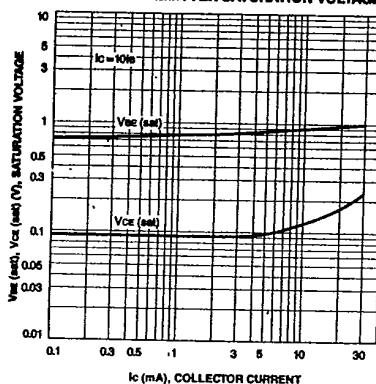
DC CURRENT GAIN



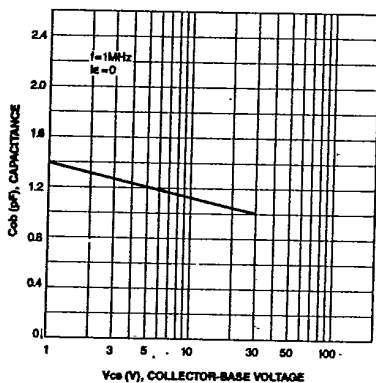
CURRENT GAIN-BANDWIDTH PRODUCT



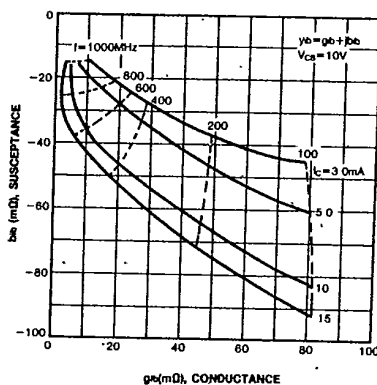
BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE



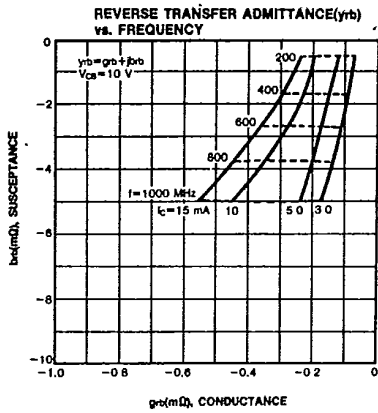
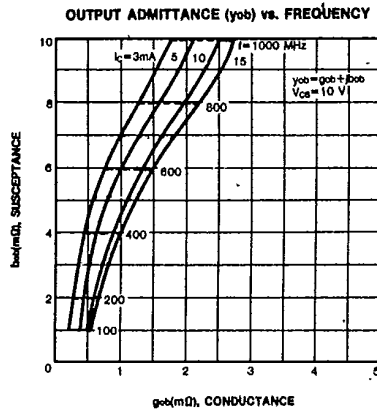
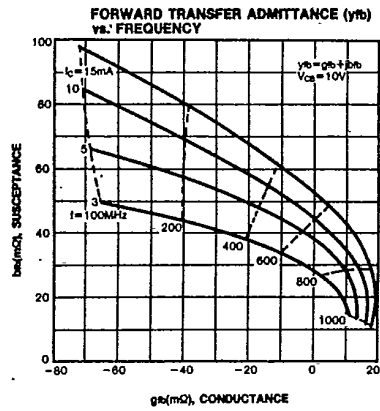
INPUT ADMITTANCE (yib) vs. FREQUENCY



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3

