

**KSC1730****NPN EPITAXIAL SILICON TRANSISTOR**

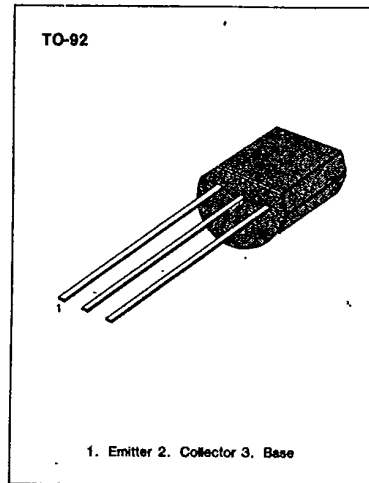
T-31-17

**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	$^\circ\text{C}$



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

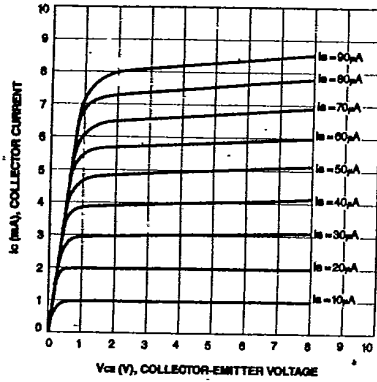
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	30			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C = 5\text{mA}, I_B = 0$	15			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	5			V
Collector Cut-off Current	$I_{CBO}$	$V_{CB} = 12\text{V}, I_E = 0$			0.1	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 5.0\text{mA}$	40		240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.5	V
Current Gain-Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 5\text{mA}$	800	1100		MHz
Output Capacitance	$C_{ob}$	$V_{CB} = 10\text{V}, f = 1\text{MHz}$			1.5	pF
Collector-Base Time Constant	$C_C \cdot r_{bb'}$	$I_E = 0$ $V_{CE} = 10\text{V}, f = 31.9\text{MHz}$ $I_E = -0.5\text{mA}$		10	20	ps

 **$h_{FE}$  CLASSIFICATION**

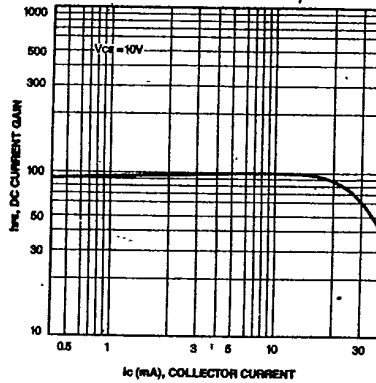
Classification	R	O	Y
$h_{FE}$	40-80	70-140	120-240



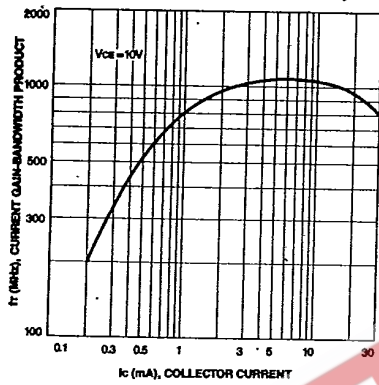
STATIC CHARACTERISTIC



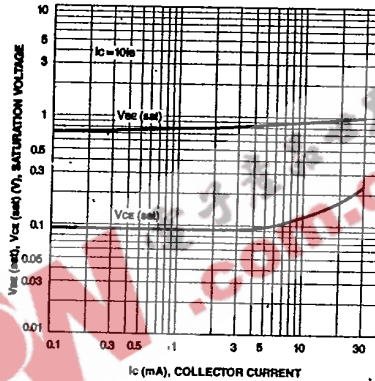
DC CURRENT GAIN



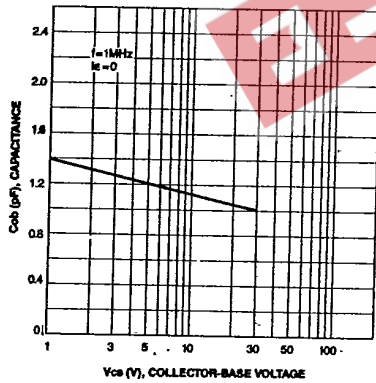
CURRENT GAIN-BANDWIDTH PRODUCT



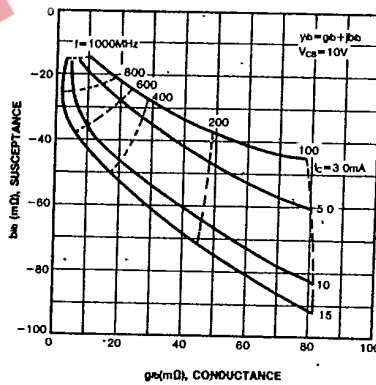
BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



OUTPUT CAPACITANCE



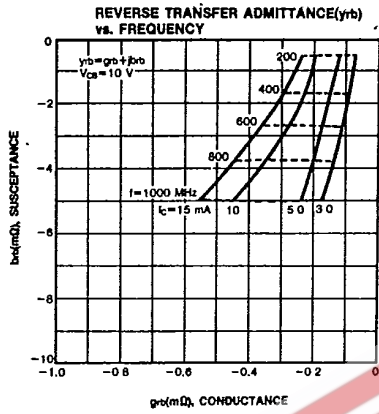
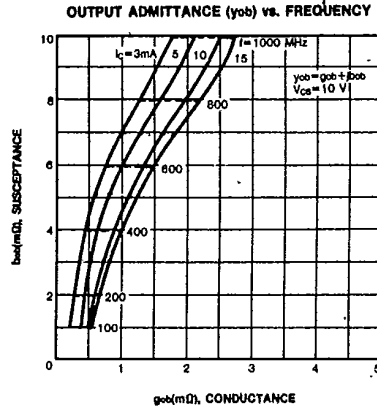
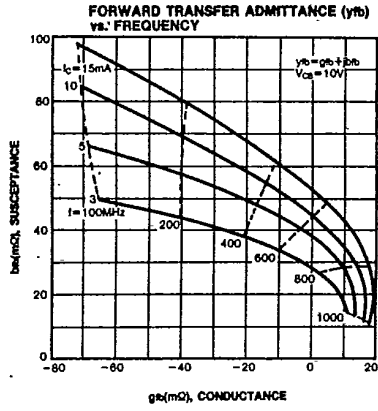
INPUT ADMITTANCE (yib) vs. FREQUENCY



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