

**KSC1394****NPN EPITAXIAL SILICON TRANSISTOR**

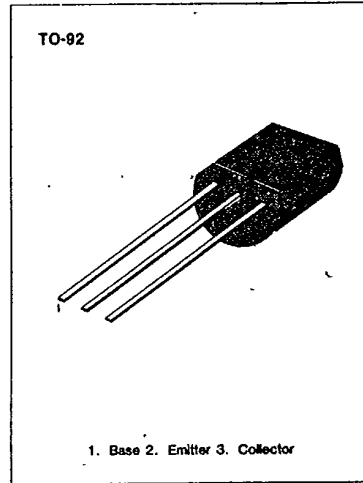
T-31-17

**TV VHF TUNER MIXER**

- High Current Gain Bandwidth Product  $f_T = 700\text{MHz}$  (Typ)
- High Power Gain  $G_{pe} = 20\text{dB}$  (Min) at  $f = 200\text{MHz}$
- Low Noise Figure  $NF = 3.5\text{dB}$  (Max) at  $f = 200\text{MHz}$

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	30	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current	$I_C$	20	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	$BV_{CEO}$	$I_C = 5\text{mA}, I_B = 0$	30			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	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 2\text{mA}$	40		180	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.7	V
Current Gain-Bandwidth Product	$f_T$	$V_{CE} = 10\text{V}, I_C = 3\text{mA}$	400	700		MHz
Reverse Transfer Capacitance	$C_{re}$	$V_{CB} = 10\text{V}, I_E = 0$ $f = 1\text{MHz}$		0.35	0.5	pF
Power Gain	$G_{pe}$	$V_{CE} = 6\text{V}, I_E = -3\text{mA}$ $R_S = 50\Omega, f = 200\text{MHz}$	20			dB
Noise Figure	NF	$V_{CE} = 6\text{V}, I_E = -3\text{mA}$ $R_S = 50\Omega, f = 200\text{MHz}$			3.5	dB

 **$h_{FE}$  CLASSIFICATION**

Classification	R	O	Y
$h_{FE}$	40-80	60-140	90-180

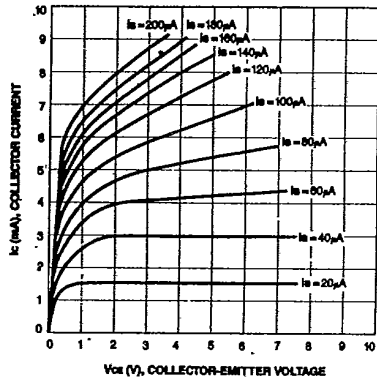


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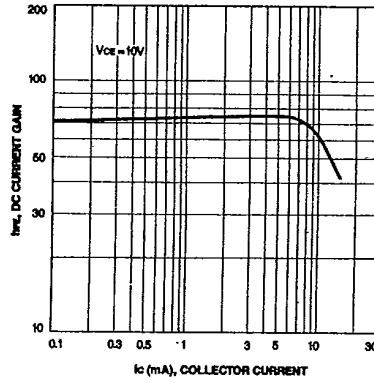
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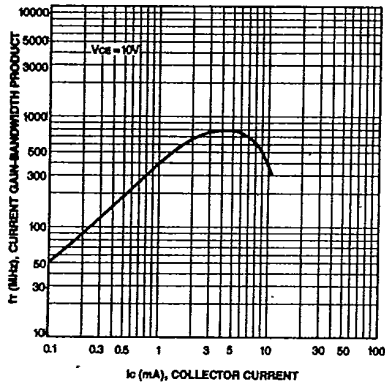
STATIC CHARACTERISTIC



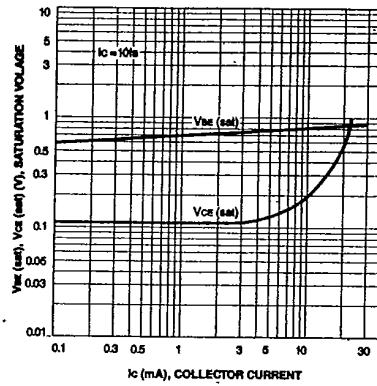
DC CURRENT GAIN



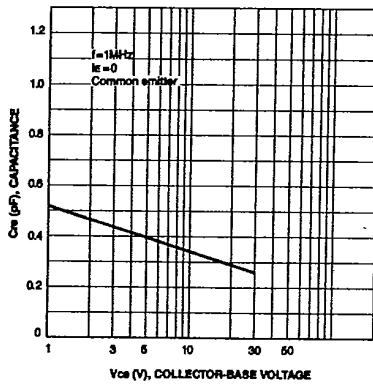
CURRENT GAIN-BANDWIDTH PRODUCT



BASE-EMITTER SATURATION VOLTAGE  
COLLECTOR-EMITTER SATURATION VOLTAGE



REVERSE CAPACITANCE



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