

SAMSUNG SEMICONDUCTOR INC 14E D 7964142 0006862 7 T-31-15
KSC921 NPN EPITAXIAL SILICON TRANSISTOR

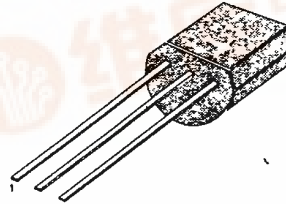
FM CONVERTER, OSCILLATOR HIGH FREQUENCY AMPLIFIER

- High Current Gain Bandwidth Product $f_T=250\text{MHz}$ (Typ)

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

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CB0}	35	V
Collector-Emitter Voltage	V_{CE0}	30	V
Emitter-Base Voltage	V_{EB0}	4	V
Collector Current	I_C	100	mA
Collector Dissipation	P_C	200	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 ~ 150	$^\circ\text{C}$

TO-92



1. Emitter 2. Base 3. Collector

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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	BV_{CB0}	$I_C=100\mu\text{A}$, $I_E=0$	35			V
Collector-Emitter Breakdown Voltage	BV_{CE0}	$I_C=10\text{mA}$, $I_B=0$	30			V
Emitter-Base Breakdown Voltage	BV_{EB0}	$I_E=-10\mu\text{A}$, $I_C=0$	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
Current Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}$, $I_C=1\text{mA}$	100	250		MHz
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$ $f=1\text{MHz}$		2.0	3.5	pF
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}$, $I_C=2\text{mA}$	40		240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$, $I_B=1\text{mA}$			0.6	V
Collector-Base Time Constant	$C_c\tau_{bb'}$	$V_{CB}=10\text{V}$, $I_E=-1\text{mA}$ $f=31.9\text{MHz}$		50	75	ps

h_{FE} CLASSIFICATION

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



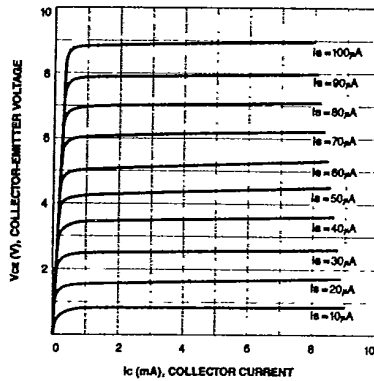
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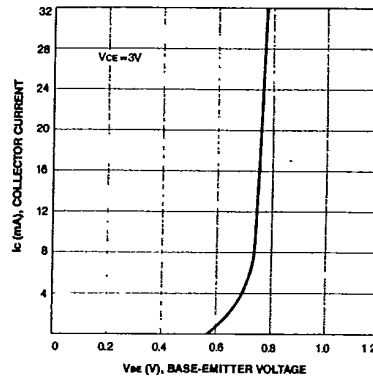
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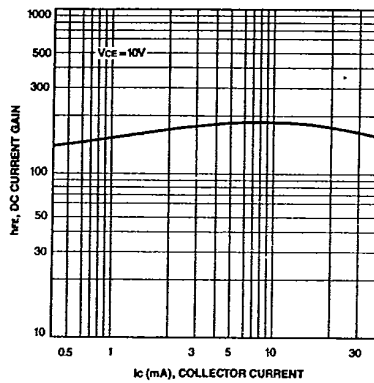
STATIC CHARACTERISTIC



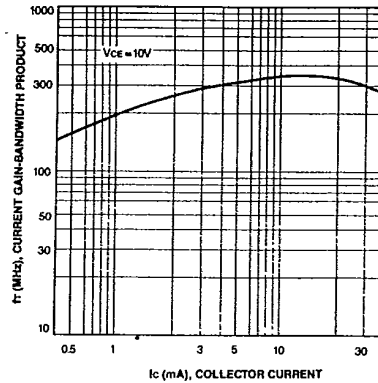
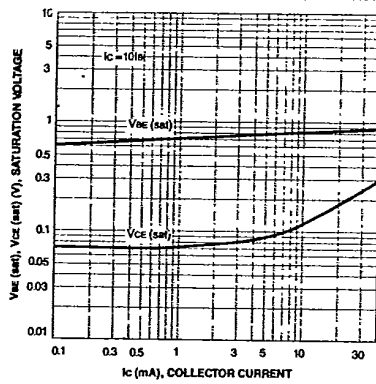
BASE-EMITTER ON VOLTAGE



DC CURRENT GAIN



CURRENT GAIN-BANDWIDTH PRODUCT

BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE

COLLECTOR OUTPUT CAPACITANCE

