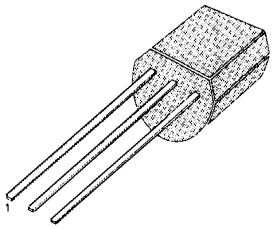
KST10/11 NPN EPITAXIAL SILICON TRANSISTOR

AMPLIFIER TRANSITOR

TO-92



1. Emitter 2. Base 3. Collector

ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Dissipation (T_A=25°C)	P_C	350	mW
Derate above 25°C		2.8	mW/°C
Collector Dissipation (T_A=25°C)	P_C	1.0	W
Derate above 25°C		8.0	W/°C
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~150	°C
Thermal Resistance, Junction to Case	Rth(j-c)	125	°C/W
Thermal Resistance, Junction to Ambient	Rth(j-a)	357	°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C)

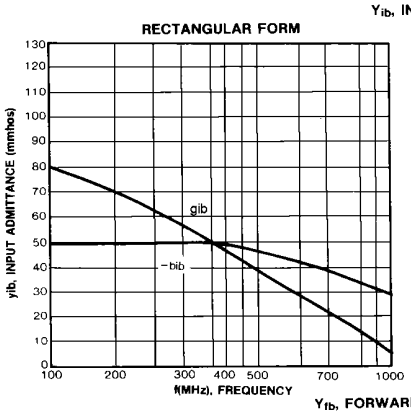
Characteristic	Symbol	Test Conditions	Min	Max	Unit
Collector-Baser Breakdown Voltage	BV_{CBO}	I_C=100μA, I_E=0	30		V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, I_B=0	25		V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA, I_C=0	3.0		V
Collector Cut-off Current	I_{CBO}	V_{CB}=25V, I_E=0		100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=2V, I_C=0		100	nA
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=4mA	60		
Collector-Emitter Saturation Voltage	V_{CE} (sat)	I_C=4mA, I_B=0.4mA		0.5	V
Base-Emitter On Voltage	V_{BE} (sat)	V_{CE}=10V, I_C=4mA		0.95	V
Current Gain Bandwidth Product	C_{CB}	V_{CE}=10V, I_C=4mA	650		MHz
Collector Base Capacitance	C_{RB}	V_{CB}=10V, I_E=0, f=1MHz		0.7	pF
Collector Base Feedback Capacitance		V_{CB}=10V, I_E=0, f=1MHz			
: KSP10	Cc·rbb´		0.35	0.65	pF
: KSP11			0.6	0.9	pF
Collector Base Time Constant		V_{CB}=10V, I_C=4mA, f=31.8MHz		9.0	ps

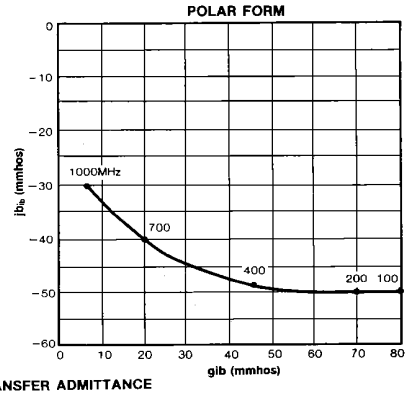
* Pulse Test: PW≤300μs, Duty Cycle≤2%

FAIRCHILD SEMICONDUCTOR TM

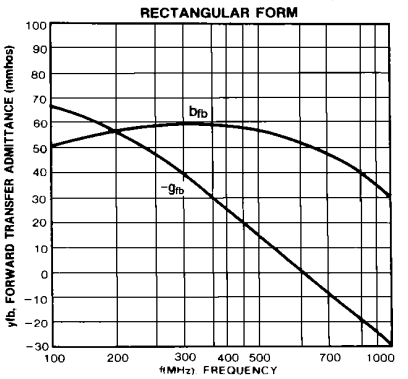
COMMON-BASE y PARAMETERS Vs FREQUENCY
(V_{CB}=10V, I_C=4mA, T_A=25°C)

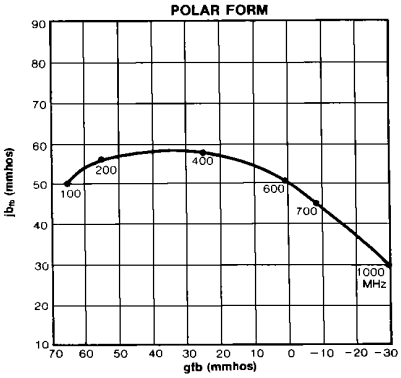
Y_{ib}, INPUT ADMITTANCE



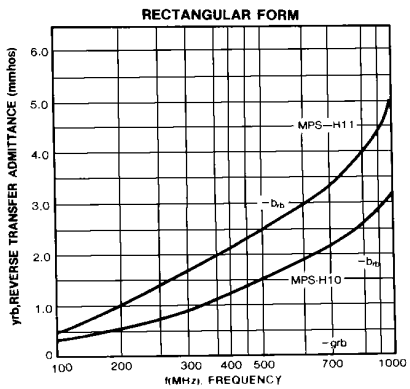


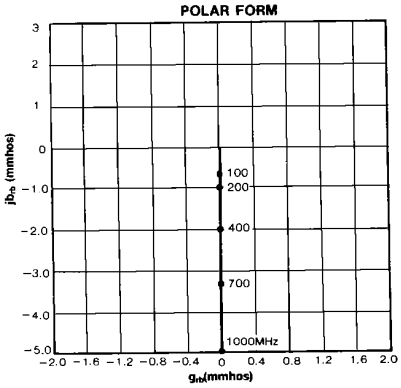
Y_{fb}, FORWARD TRANSFER ADMITTANCE





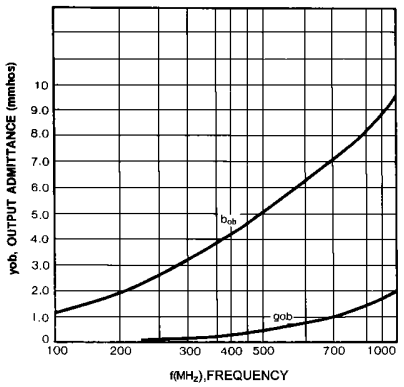
Y_{rb}, REVERSE TRANSFER ADMITTANCE



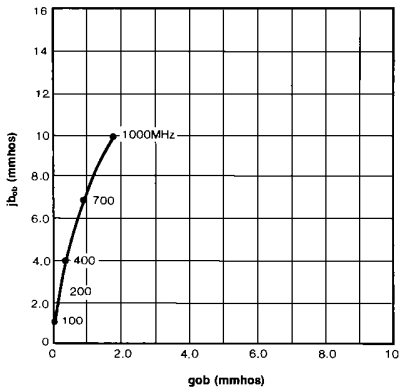


Y_{ob}, OUTPUT ADMITTANCE

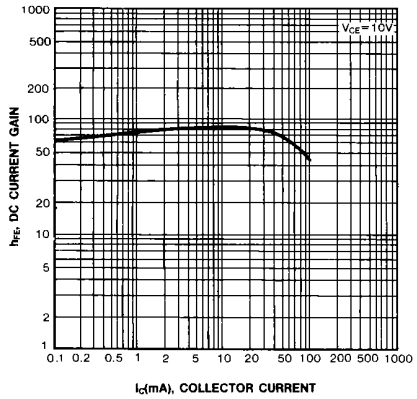
RECTANGULAR FORM



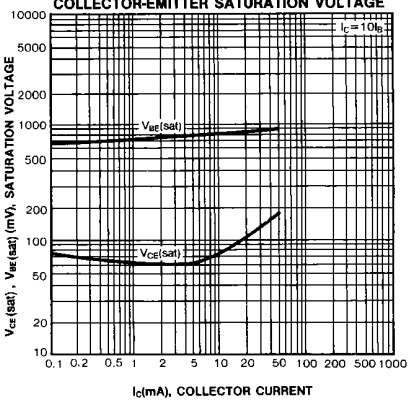
POLAR FORM



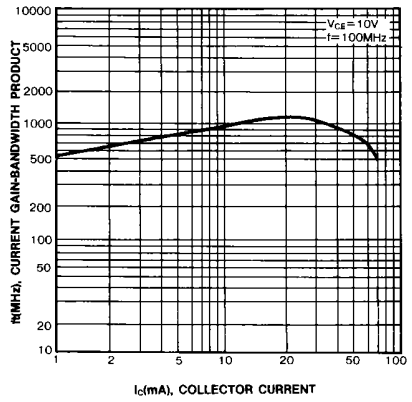
DC CURRENT GAIN



BASE-EMITTER SATURATION VOLTAGE
COLLECTOR-EMITTER SATURATION VOLTAGE



CURRENT GAIN BANDWIDTH PRODUCT



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