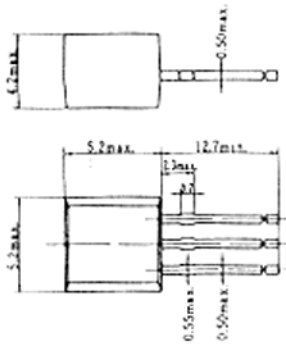
HITACHI

2SC1907

SILICON NPN EPITAXIAL PLANAR

UHF AMPLIFIER
UHF TV TUNER LOCAL OSCILLATOR

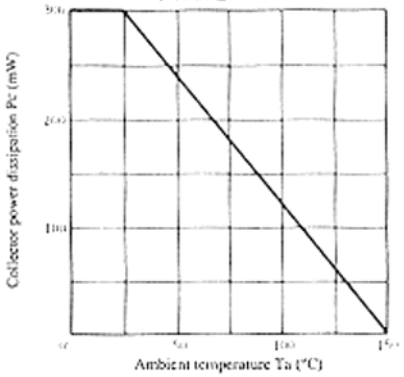


(JEDEC TO-92)

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SC1907	Unit
Collector to base voltage	V_{CBO}	30	V
Collector to emitter voltage	V_{CEO}	19	V
Emitter to base voltage	V_{EBO}	2	V
Collector current	I_C	50	mA
Emitter current	I_E	−50	mA
Collector power dissipation	P_C	300	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

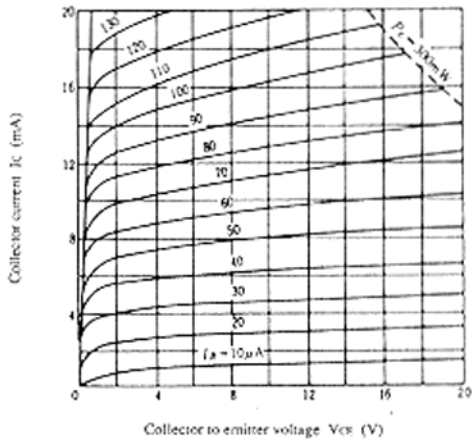
MAXIMUM COLLECTOR DISSIPATION CURVE



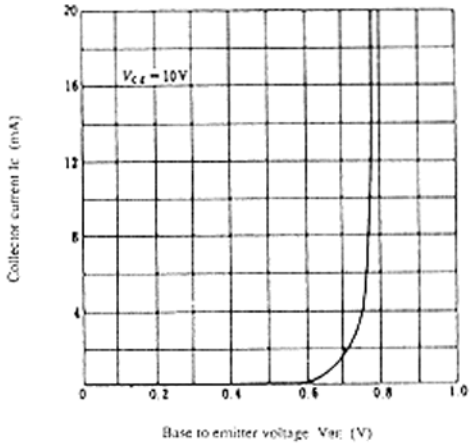
■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Collector to base breakdown voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	30	—	—	V
Collector to emitter breakdown voltage	$V_{(BR)CEO}$	I_C = 3mA, R_{BE} = ∞	19	—	—	V
Emitter to base breakdown voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	2	—	—	V
Collector cutoff current	I_{CBO}	V_{CB} = 10V, I_E = 0	—	—	0.5	μA
DC current transfer ratio	h_{FE}	V_{CE} = 10V, I_C = 10mA	40	—	—	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 20mA, I_B = 4mA	—	0.2	1.0	V
Collector output capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	1.0	2.0	pF
Gain bandwidth product	f_T	V_{CE} = 10V, I_C = 10mA	900	1100	—	MHz
Base time constant	$r_{bb'}C_C$	V_{CB} = 10V, I_C = 10mA, f = 31.8MHz	—	10	25	ps
Oscillation output power	P_{osc}	V_{CB} = 10V, I_C = 10mA, f = 930MHz	—	8	—	mW

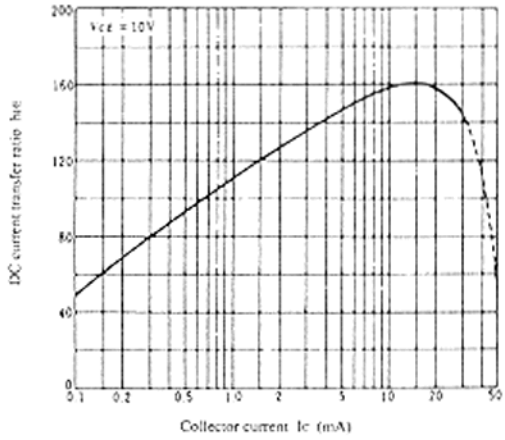
TYPICAL OUTPUT CHARACTERISTICS



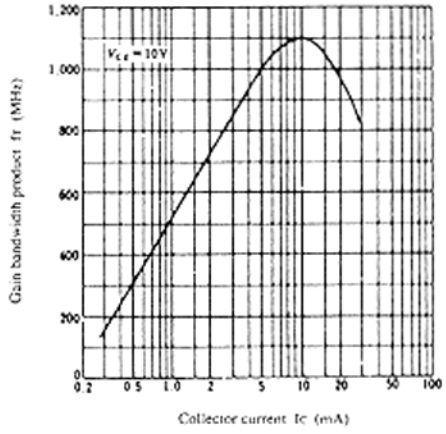
TYPICAL TRANSFER CHARACTERISTICS



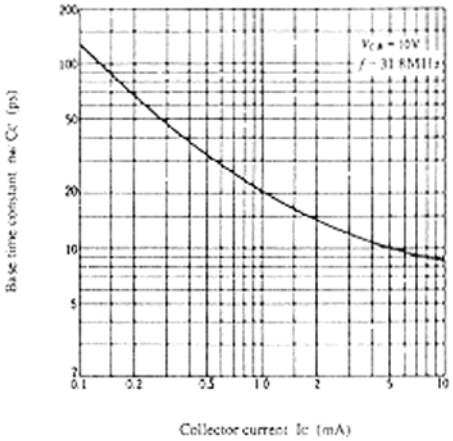
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



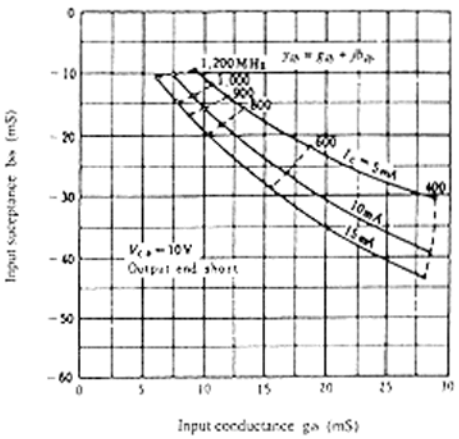
GAIN BANDWIDTH PRODUCT VS. COLLECTOR CURRENT



BASE TIME CONSTANT VS. COLLECTOR CURRENT



INPUT ADMITTANCE CHARACTERISTICS



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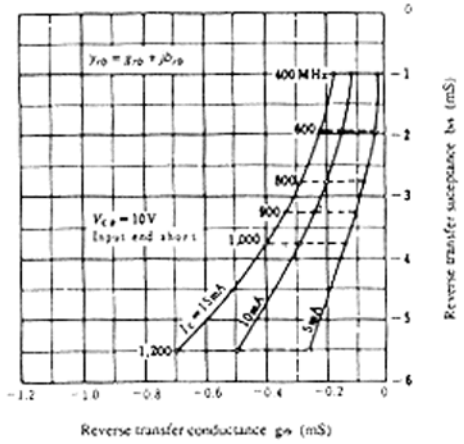
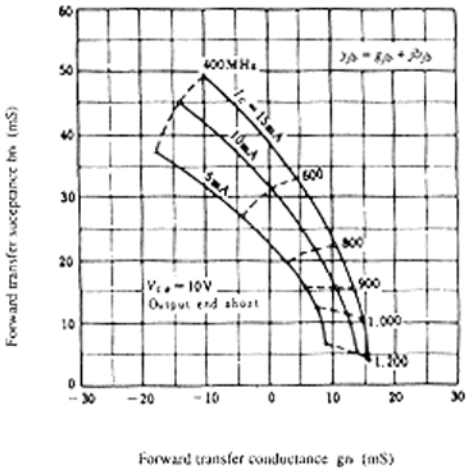
REVERSE TRANSFER ADMITTANCE CHARACTERISTICS



FORWARD TRANSFER ADMITTANCE CHARACTERISTICS



OUTPUT ADMITTANCE CHARACTERISTICS