

DESCRIPTION The 2SC1674 is designed for use in FM RF amplifier and local oscillator of FM tuner.

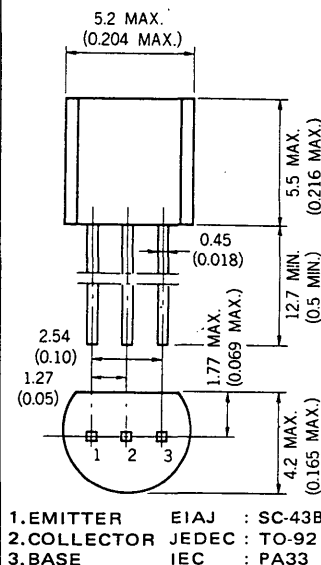
- FEATURES**
- High gain bandwidth product ($f_T = 600$ MHz TYP.)
 - Small output capacitance ($C_{ob} = 1.0$ pF TYP.)
 - Low noise figure (NF = 3.0 dB TYP. @100 MHz)

ABSOLUTE MAXIMUM RATINGS

Maximum Temperatures		
Storage Temperature		-55 to +125 °C
Junction Temperature		+125 °C Maximum
Maximum Power Dissipation ($T_a = 25$ °C)		
Total Power Dissipation		250 mW
Maximum Voltages and Currents ($T_a = 25$ °C)		
VCBO	Collector to Base Voltage	30 V
VCEO	Collector to Emitter Voltage	20 V
VEBO	Emitter to Base Voltage	4.0 V
IC	Collector Current	20 mA
IB	Base Current	20 mA

PACKAGE DIMENSIONS

in millimeters (inches)



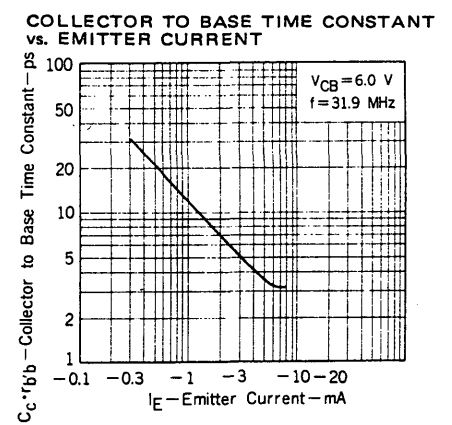
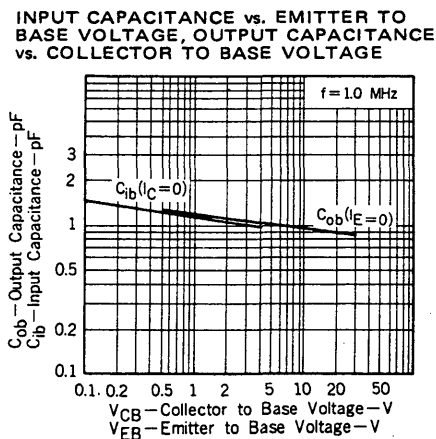
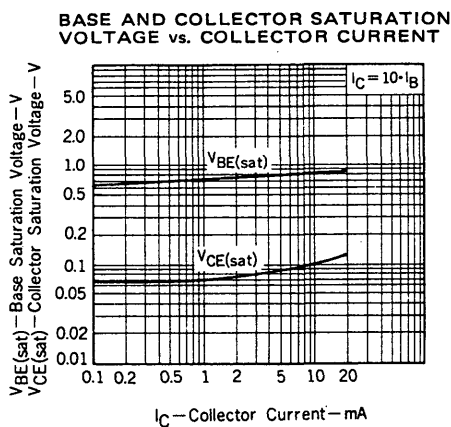
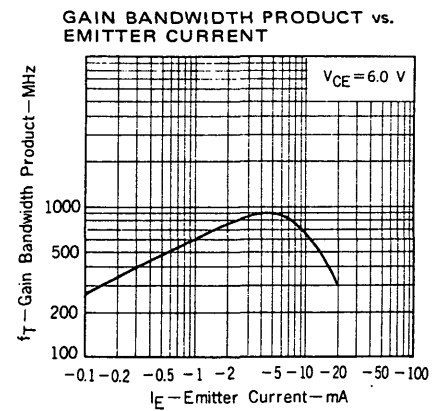
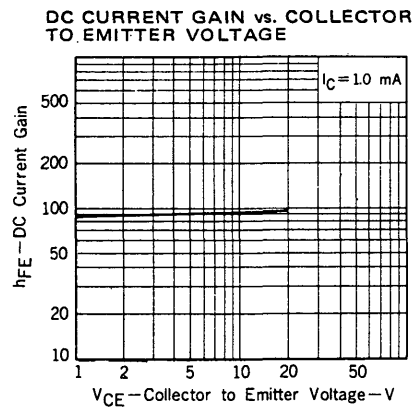
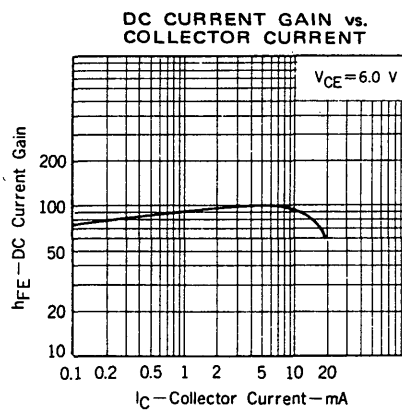
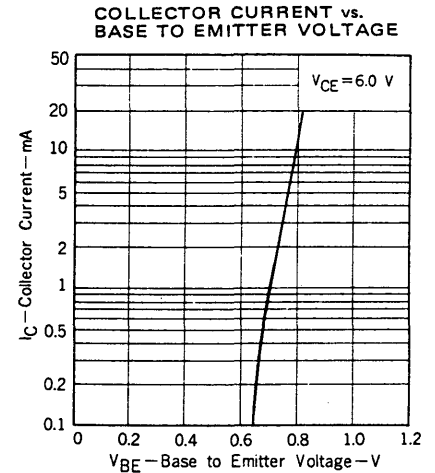
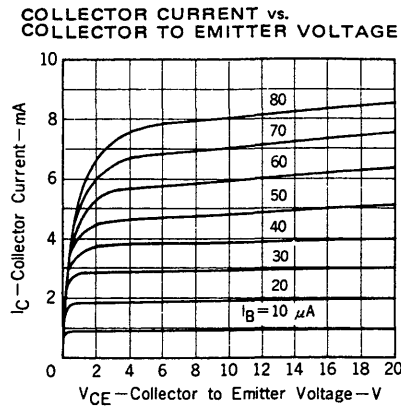
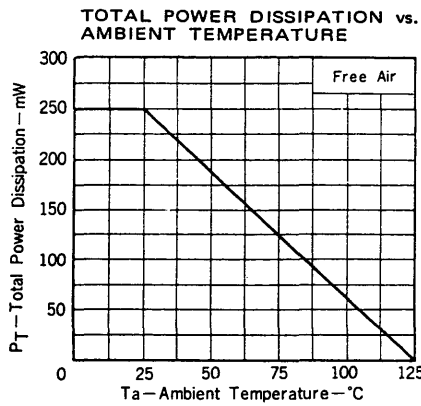
ELECTRICAL CHARACTERISTICS ($T_a = 25$ °C)

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
h_{FE}	DC Current Gain	40	90	180	—	$V_{CE} = 6.0$ V, $I_C = 1.0$ mA
C_{ob}	Output Capacitance		1.0	1.3	pF	$V_{CB} = 6.0$ V, $I_E = 0$, $f = 1.0$ MHz
NF	Noise Figure		3.0	5.0	dB	$V_{CE} = 6.0$ V, $I_E = -1.0$ mA, $R_G = 50$ Ω , $f = 100$ MHz See test circuit
f_T	Gain Bandwidth Product	400	600		MHz	$V_{CE} = 6.0$ V, $I_E = -1.0$ mA
G_{pe}	Power Gain	18	22		dB	$V_{CE} = 6.0$ V, $I_E = -1.0$ mA, $R_G = 50$ Ω , $f = 100$ MHz See test circuit
$C_{c-rb'b}$	Collector to Base Time Constant		12	15	ps	$V_{CE} = 6.0$ V, $I_E = -1.0$ mA, $f = 31.9$ MHz
I_{CBO}	Collector Cutoff Current			100	nA	$V_{CB} = 30$ V, $I_E = 0$
I_{EBO}	Emitter Cutoff Current			100	nA	$V_{EB} = 3.0$ V, $I_C = 0$
V_{BE}	Base to Emitter Voltage		0.72		V	$V_{CE} = 6.0$ V, $I_C = 1.0$ mA
$V_{CE(sat)}$	Collector Saturation Voltage		0.1	0.3	V	$I_C = 10$ mA, $I_B = 1.0$ mA

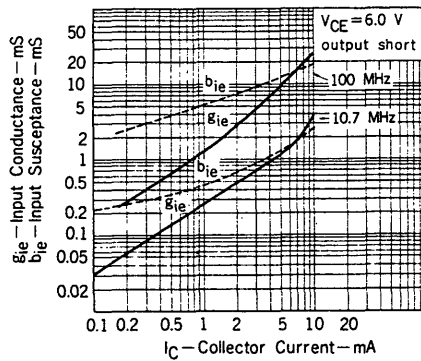
Classification of h_{FE}

Rank	M	L	K
Range	40 - 80	60 - 120	90 - 180

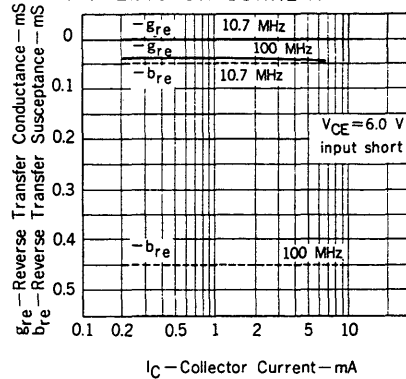
h_{FE} Test Conditions : $V_{CE} = 6.0$ V, $I_C = 1.0$ mA

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

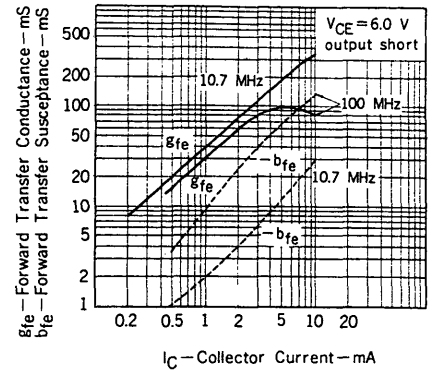
INPUT ADMITTANCE vs. COLLECTOR CURRENT



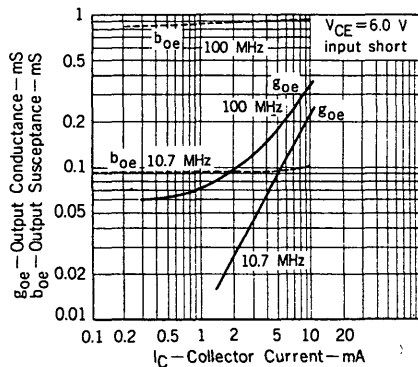
REVERSE TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



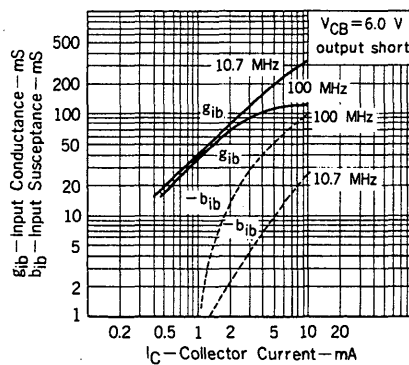
FORWARD TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



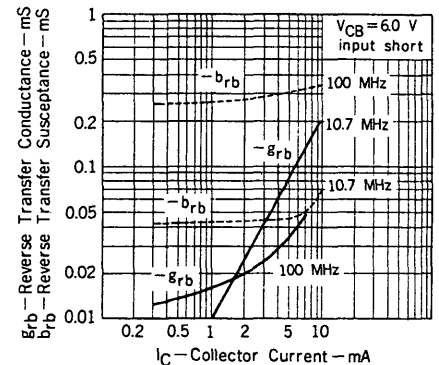
OUTPUT ADMITTANCE vs. COLLECTOR CURRENT



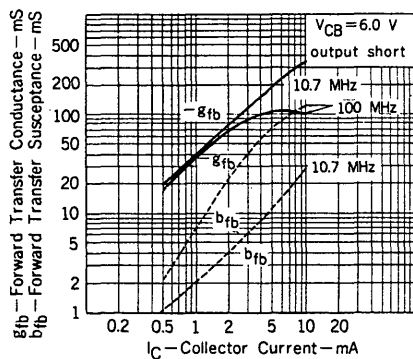
INPUT ADMITTANCE vs. COLLECTOR CURRENT



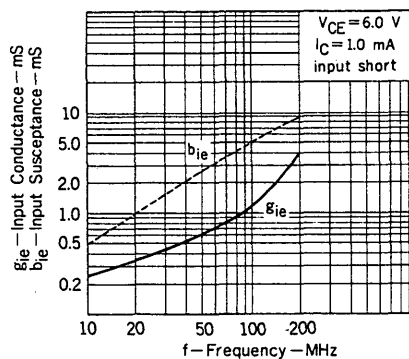
REVERSE TRANSFER ADMITTANCE vs. COLLECTOR CURRENT



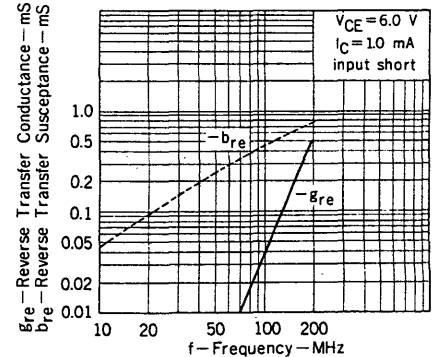
FORWARD TRANSFER ADMITTANCE vs. COLLECTOR CURRENT

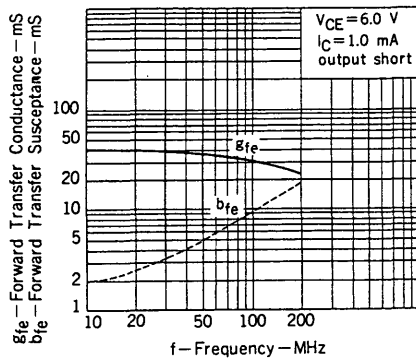
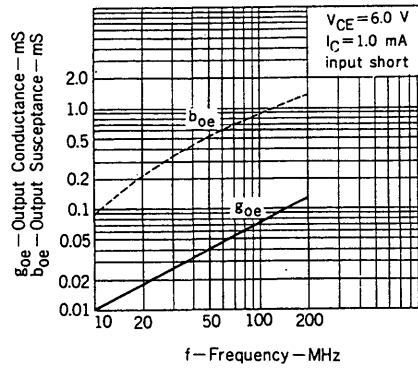
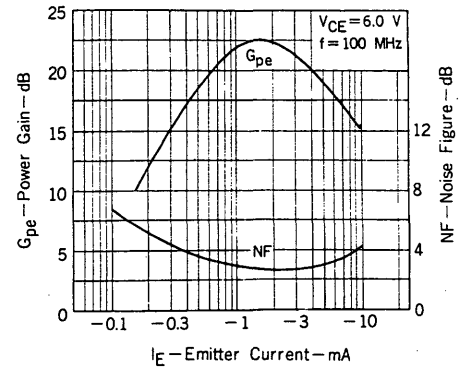


INPUT ADMITTANCE vs. FREQUENCY



REVERSE TRANSFER ADMITTANCE vs. FREQUENCY



FORWARD TRANSFER ADMITTANCE
vs. FREQUENCYOUTPUT ADMITTANCE
vs. FREQUENCYPOWER GAIN, NOISE FIGURE
vs. EMITTER CURRENT100 MHz G_{pe} , NF TEST CIRCUIT