

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

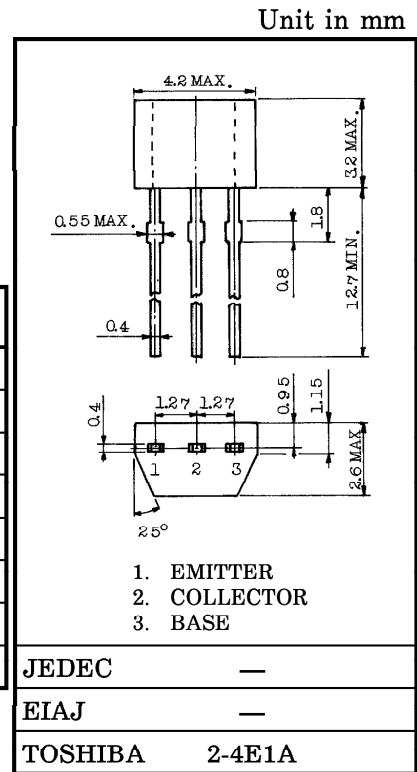
# 2SC2670

HIGH FREQUENCY AMPLIFIER APPLICATIONS.  
 AM HIGH FREQUENCY AMPLIFIER APPLICATIONS.  
 AM FREQUENCY CONVERTER APPLICATIONS.

- Low Noise Figure : NF=3.5dB (Max.) (f=1MHz)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	35	V
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Base Voltage	V <sub>EBO</sub>	4	V
Collector Current	I <sub>C</sub>	100	mA
Base Current	I <sub>B</sub>	20	mA
Collector Power Dissipation	P <sub>C</sub>	200	mW
Junction Temperature	T <sub>j</sub>	125	°C
Storage Temperature Range	T <sub>stg</sub>	-55~125	°C



ELECTRICAL CHARACTERISTICS (Ta = 25°C)

Weight : 0.13g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I <sub>CB0</sub>	V <sub>CB</sub> = 35V, I <sub>E</sub> = 0	—	—	0.1	μA
Emitter Cut-off Current	I <sub>EBO</sub>	V <sub>EB</sub> = 4V, I <sub>C</sub> = 0	—	—	1.0	μA
DC Current Gain	h <sub>FE</sub> (Note)	V <sub>CE</sub> = 12V, I <sub>C</sub> = 2mA	40	—	240	—
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1mA	—	—	0.4	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 1mA	—	—	1.0	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 2mA	80	—	—	MHz
Reverse Transfer Capacitance	C <sub>re</sub>	V <sub>CE</sub> = 10V, f = 1MHz	—	2.2	3.0	pF
Collector-Base Time Constant	C <sub>c.rbb'</sub>	V <sub>CE</sub> = 10V, I <sub>E</sub> = -1mA, f = 30MHz	—	—	50	ps
Noise Figure	NF	V <sub>CE</sub> = 10V, I <sub>E</sub> = -1mA, f = 1MHz, R <sub>g</sub> = 50Ω	—	2.0	3.5	dB

Note : h<sub>FE</sub> Classification R : 40~80, O : 70~140, Y : 120~240

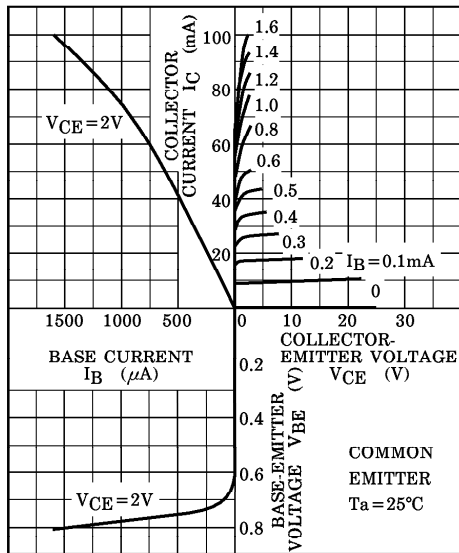
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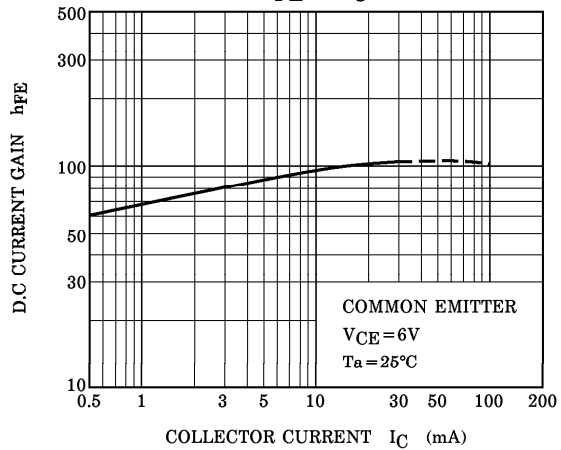
Y PARAMETERS (Typ.) (COMMON EMITTER  $V_{CE}=6V$ ,  $I_E = -1mA$ ,  $f=1MHz$ )

CHARACTERISTIC	SYMBOL	2SC2670-R	2SC2670-O	2SC2670-Y	UNIT
Input Conductance	$g_{ie}$	0.5	0.35	0.22	mS
Input Capacitance	$C_{ie}$	50	48	46	pF
Output Conductance	$g_{oe}$	4	5	6.5	$\mu$ S
Output Capacitance	$C_{oe}$	3.7	3.4	3.2	pF
Forward Transfer Admittance	$ y_{fe} $	36	36	36	mS
Phase Angle of Forward Transfer Admittance	$\theta_{fe}$	-1.6	-1.6	-1.6	$^\circ$
Reverse Transfer Admittance	$ y_{re} $	14	14	14	$\mu$ S
Phase Angle of Reverse Transfer Admittance	$\theta_{re}$	-90	-90	-90	$^\circ$

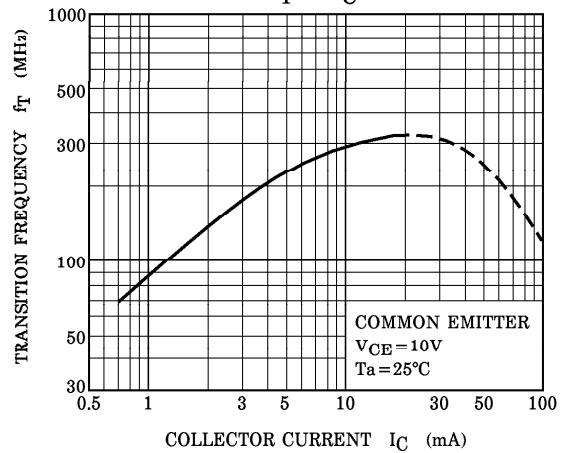
STATIC CHARACTERISTICS



$h_{FE} - I_C$



$f_T - I_C$



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