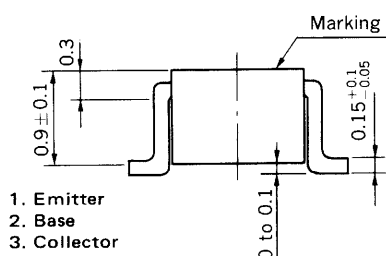
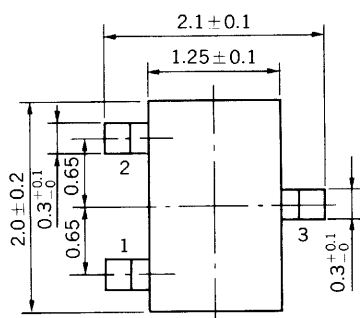


HIGH FREQUENCY AMPLIFIER AND SWITCHING PNP SILICON EPITAXIAL TRANSISTOR

in millimeters



- High f_T : $f_T = 400$ MHz
- Complementary to 2SC3739

Maximum Voltages and Current ($T_a = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CBO}	-60	V
Collector to Emitter Voltage	V_{CEO}	-40	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current (DC)	I_C	-500	mA

Maximum Power Dissipation

Total power Dissipation			
at 25 °C Ambient Temperature	P_T	150	mW

Maximum Temperatures

Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	−55 to +150	°C

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-100	nA	$V_{CB} = -40\text{ V}$, $I_E = 0$
Emitter Cutoff Current	I_{EBO}			-100	nA	$V_{EB} = -4.0\text{ V}$, $I_C = 0$
DC Current Gain	h_{FE1}^*	75	140	300		$V_{CE} = -2.0\text{ V}$, $I_C = -150\text{ mA}$
DC Current Gain	h_{FE2}^*	20	50			$V_{CE} = -2.0\text{ V}$, $I_C = -150\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^*$		-0.45	-0.75	V	$I_C = -500\text{ mA}$, $I_B = -50\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}^*$		-1.0	-1.30	V	$I_C = -500\text{ mA}$, $I_B = -50\text{ mA}$
Gain Bandwidth Product	f_T	150	400		MHz	$V_{CE} = -10\text{ V}$, $I_E = 20\text{ mA}$
Output Capacitance	C_{ob}		5.0	8.0	pF	$V_{CB} = -10\text{ V}$, $I_E = 0$, $f = 1.0\text{ MHz}$
Turn-on Time	t_{on}		25		ns	$V_{CC} = -30\text{ V}$ $I_C = 150\text{ mA}$ $I_{B1} = -I_{B2} = 15\text{ mA}$
Storage Time	t_{stg}		70		ns	
Turn-off Time	t_{off}		100		ns	

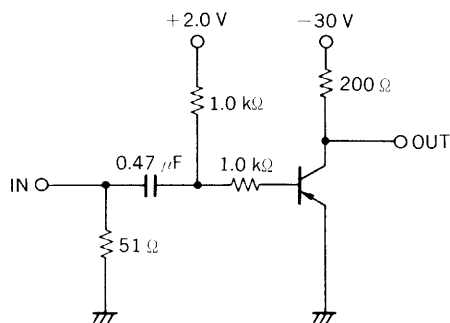
* Pulsed: PW $\leq 350 \mu s$, Duty Cycle $\leq 2 \%$

h_{FF} Classification

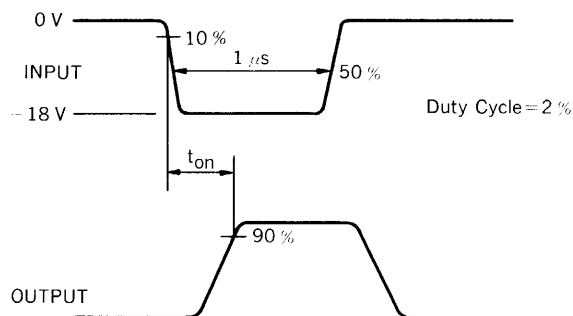
Making	Y12	Y13	Y14
hFE1	75 to 150	100 to 200	150 to 300

NEC cannot assume any responsibility for any circuits shown or represent that they are free from patent infringement.

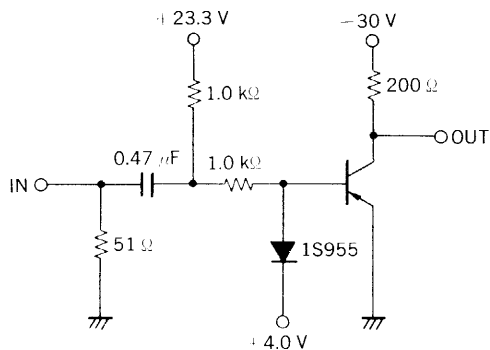
SWITCHING TIME TEST CIRCUIT



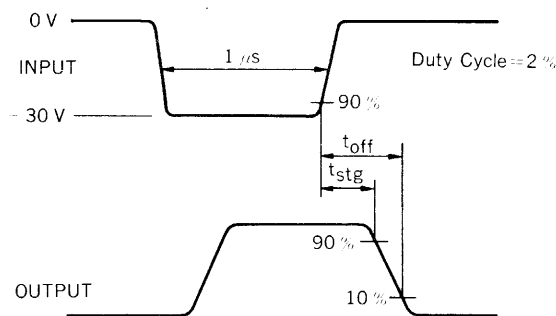
t_{on} SWITCHING



VOLTAGE WAVEFORMS

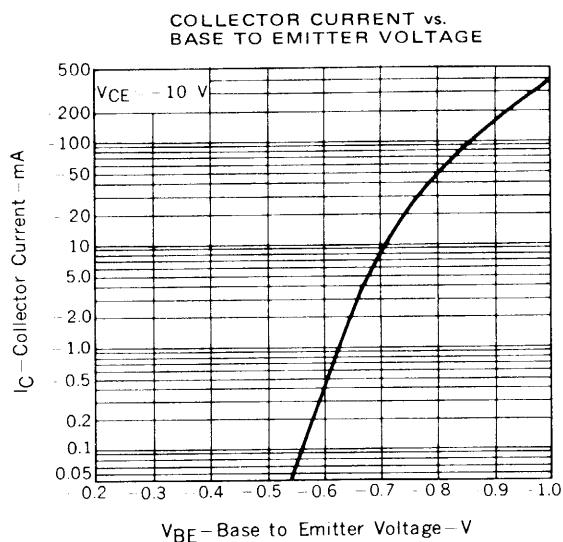
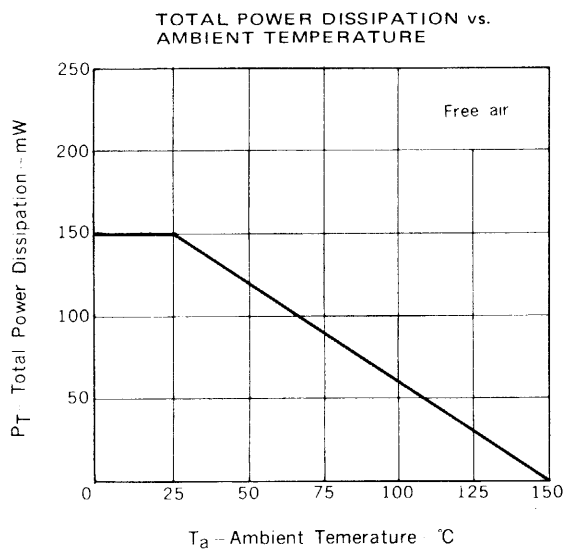


t_{stg} , t_{off} SWITCHING

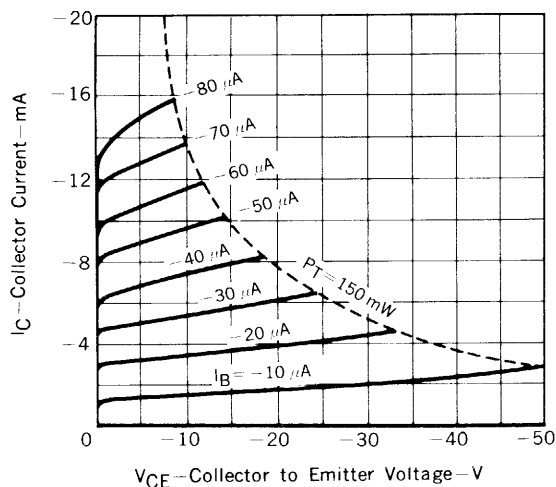


VOLTAGE WAVEFORMS

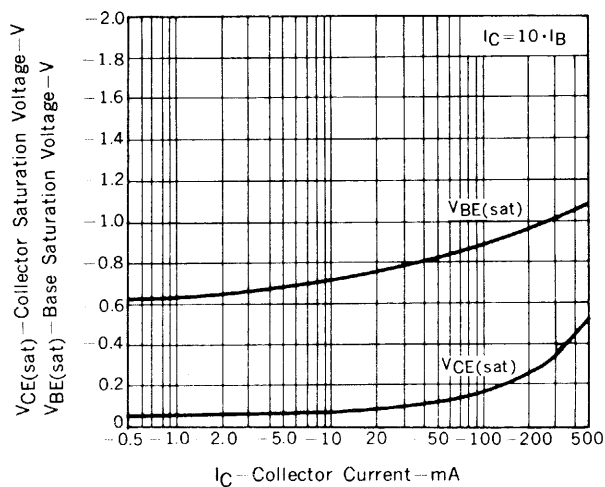
TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)



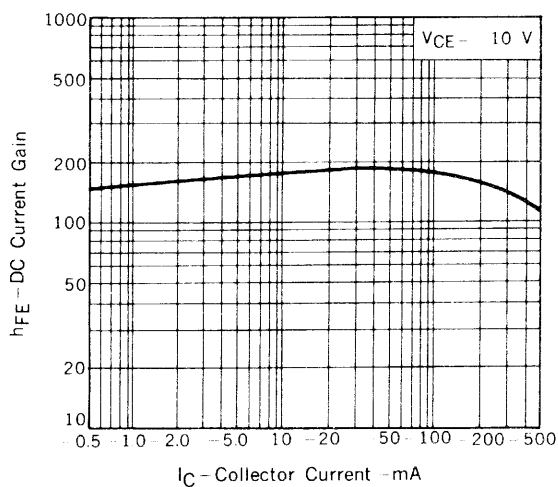
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



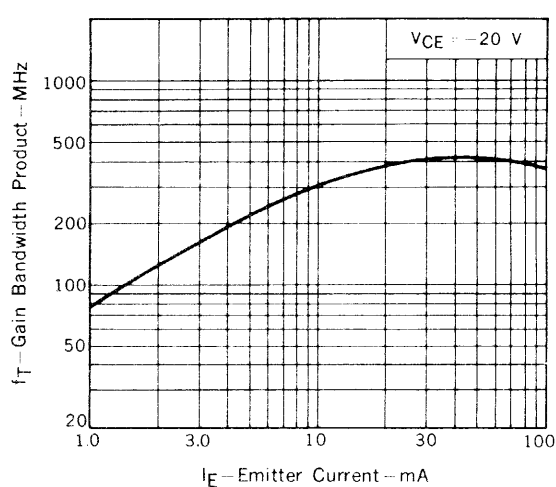
BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



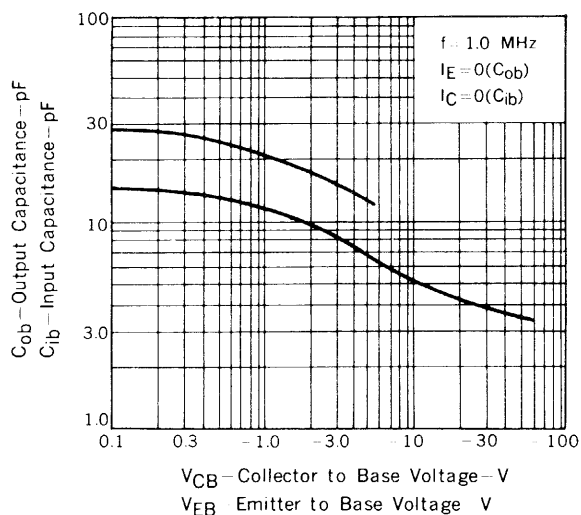
DC CURRENT GAIN vs.
COLLECTOR CURRENT



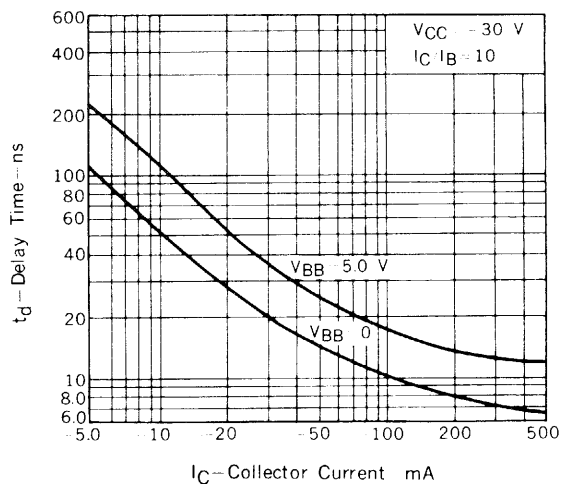
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT

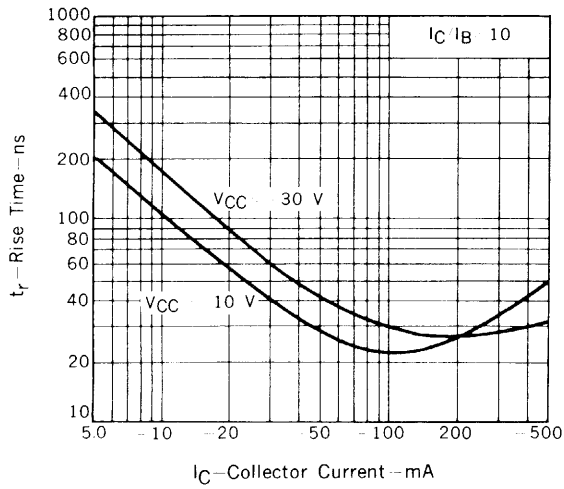
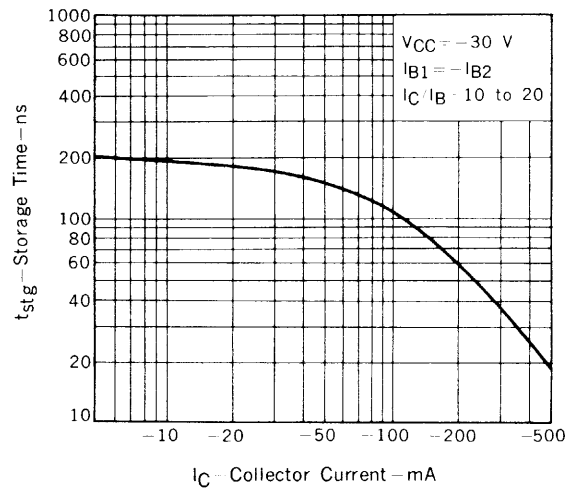


INPUT AND OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE



DELAY TIME vs.
COLLECTOR CURRENT



RISE TIME vs.
COLLECTOR CURRENTSTORAGE TIME vs.
COLLECTOR CURRENTFALL TIME vs.
COLLECTOR CURRENT