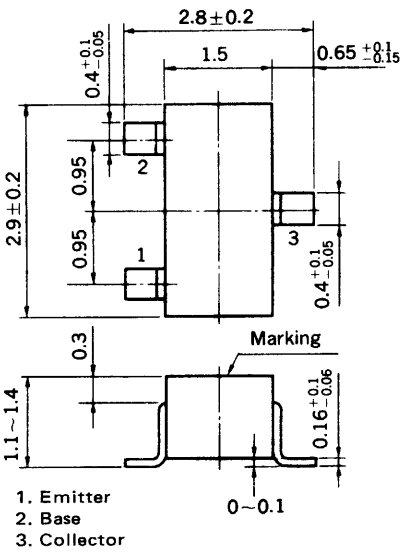
NEC
ELECTRON DEVICE

SILICON TRANSISTOR
2SC1621

HIGH SPEED SWITCHING
NPN SILICON EPITAXIAL TRANSISTOR
MINI MOLD

PACKAGE DIMENSIONS
in millimeters



1. Emitter
2. Base
3. Collector

FEATURE

- High Speed : t_{stg} = 20 ns MAX.

ABSOLUTE MAXIMUM RATINGS

Maximum Voltages and Current (T_a = 25 °C)			
Collector to Base Voltage	V_{CBO}	40	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	200	mA
Maximum Power Dissipation			
Total Power Dissipation at 25 °C Ambient Temperature	P_T	200	mW
Maximum Temperatures			
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	−55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			100	nA	V_{CB} = 30 V, I_E = 0
Emitter Cutoff Current	I_{EBO}			100	nA	V_{EB} = 4.0 V, I_C = 0
DC Current Gain	h_{FE1} *	40	80	180		V_{CE} = 0.5 V, I_C = 1.0 mA
Collector Saturation Voltage	$V_{CE(sat)}$ *		0.13	0.25	V	I_C = 10 mA, I_B = 1.0 mA
Base Saturation Voltage	$V_{BE(sat)}$ *		0.74	0.85	V	I_C = 10 mA, I_B = 1.0 mA
Gain Bandwidth Product	f_T	200	500		MHz	V_{CE} = 10 V, I_E = −10 mA
Output Capacitance	C_{ob}		3.0	6.0	pF	V_{CB} = 10 V, I_E = 0, f = 1.0 MHz
Turn-on Time	t_{on}		12	20	ns	See Test Circuit
Storage Time	t_{stg}		7	20	ns	
Turn-off Time	t_{off}		18	40	ns	

* Pulsed: PW ≦ 350 μs, Duty Cycle ≦ 2 %

h_{FE} Classification

Marking	B2	B3	B4
h_{FE}	40 to 80	60 to 120	90 to 180

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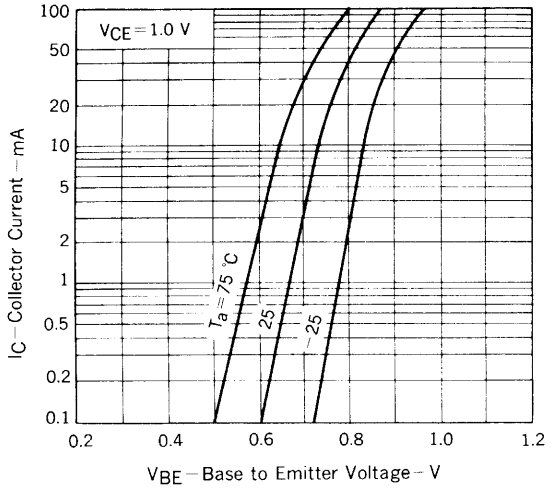
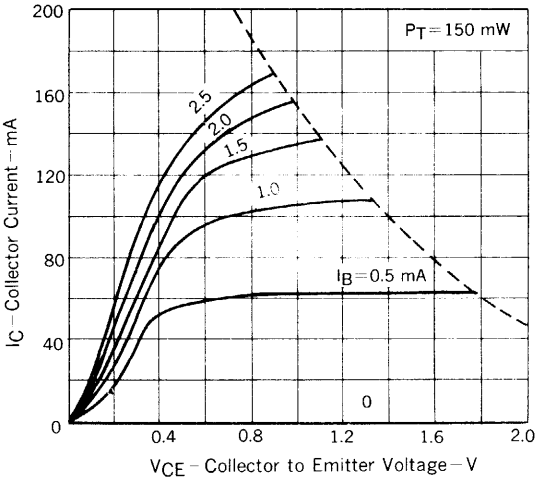
TYPICAL CHARACTERISTICS (T_a = 25 °C)

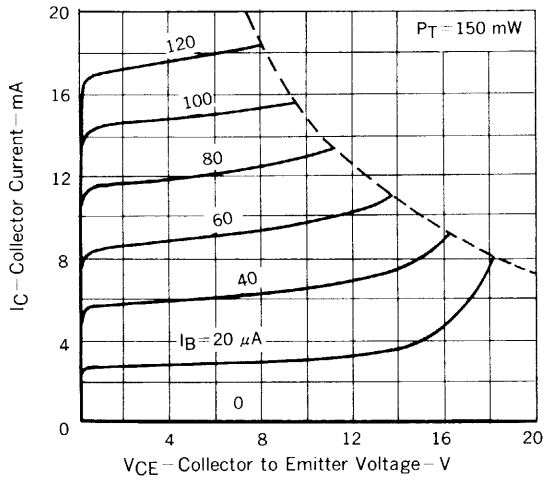
COLLECTOR CURRENT vs.
BASE TO EMITTER VOLTAGE



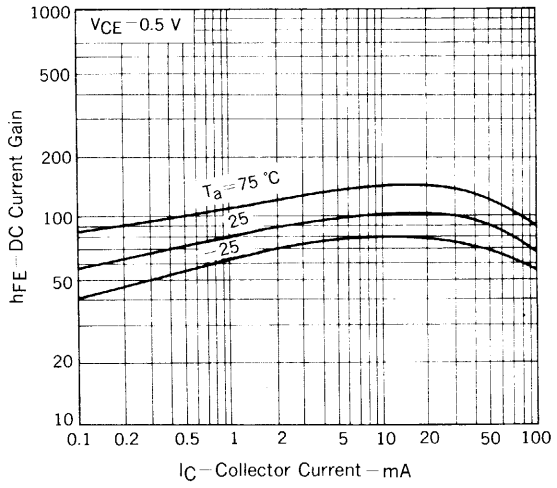
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



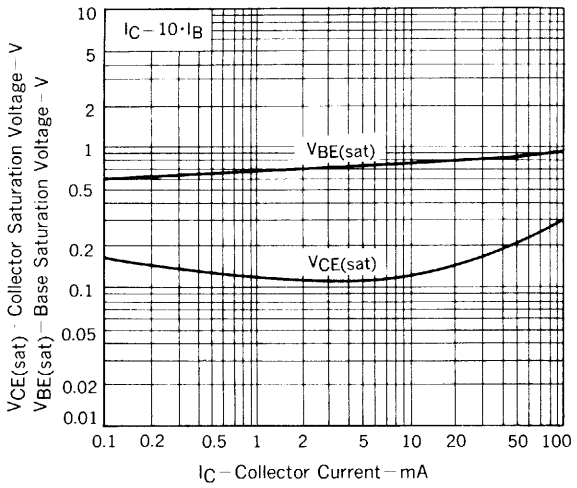
COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



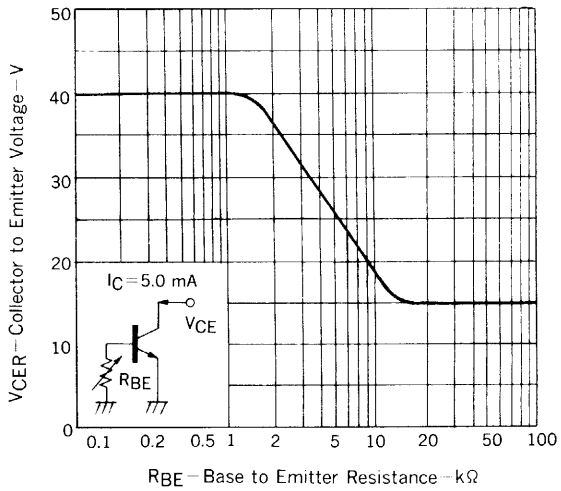
DC CURRENT GAIN vs.
COLLECTOR CURRENT



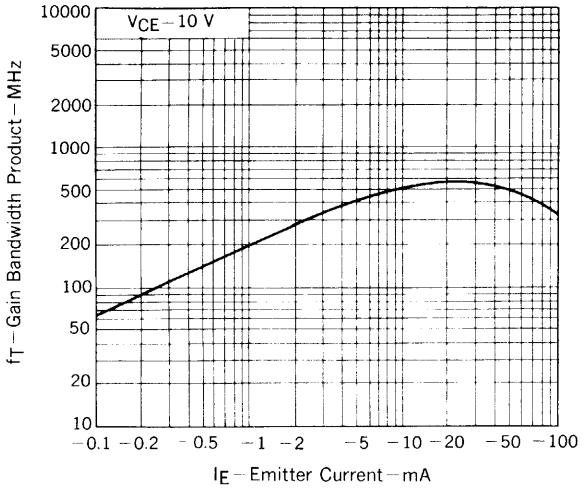
BASE AND COLLECTOR SATURATION
VOLTAGE vs. COLLECTOR CURRENT



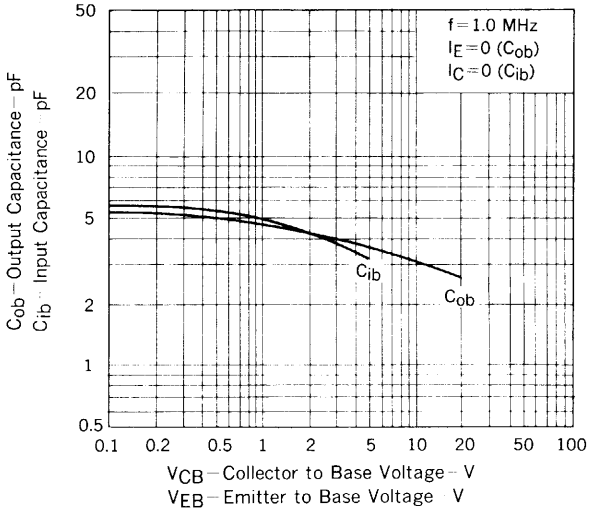
COLLECTOR TO EMITTER VOLTAGE vs.
BASE EMITTER RESISTANCE



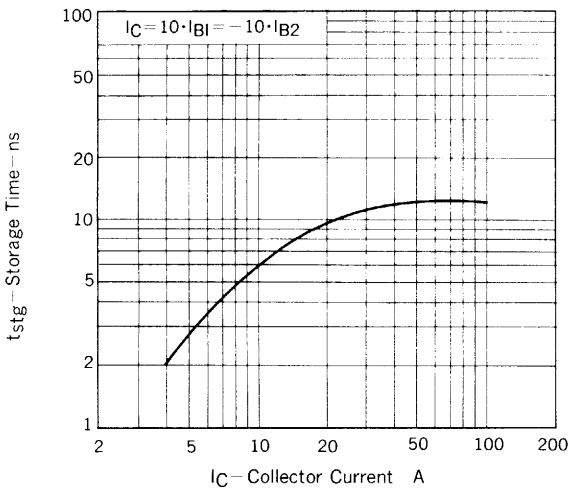
GAIN BANDWIDTH PRODUCT vs.
EMITTER CURRENT



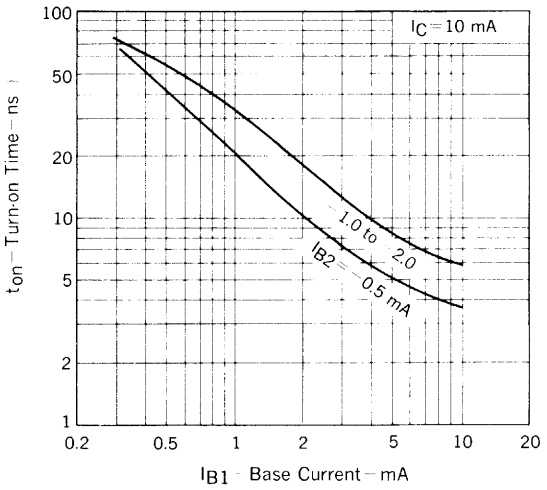
INPUT AND OUTPUT CAPACITANCE vs.
REVERSE VOLTAGE



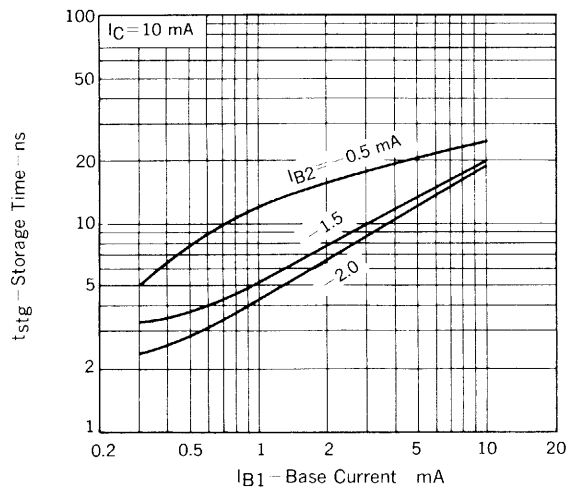
STORAGE TIME vs.
COLLECTOR CURRENT



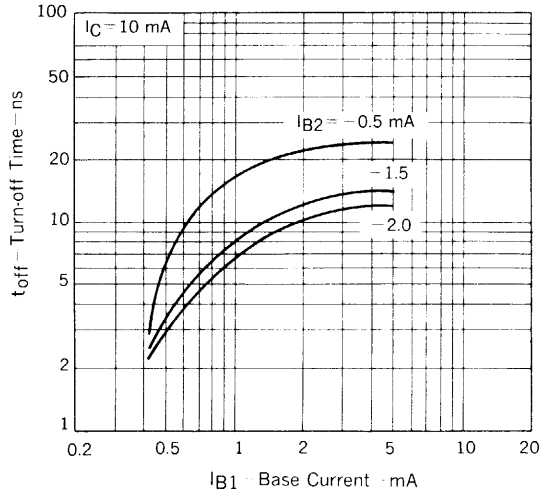
TURN ON TIME vs.
BASE CURRENT



STORAGE TIME vs.
BASE CURRENT

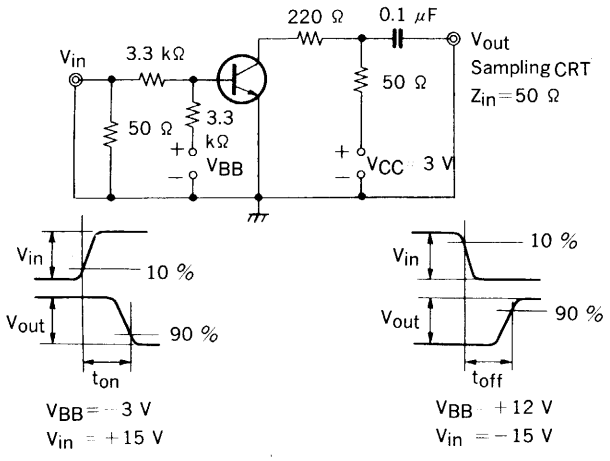


TURN OFF TIME vs.
BASE CURRENT

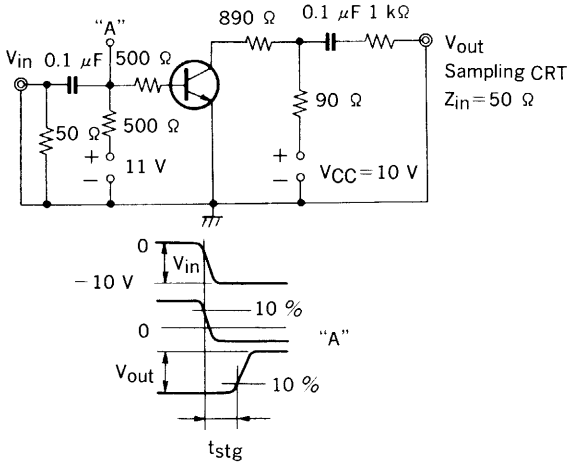


SWITCHING TIME TEST CIRCUIT

t_{on}, t_{off} TEST CIRCUIT



t_{stg} TEST CIRCUIT



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