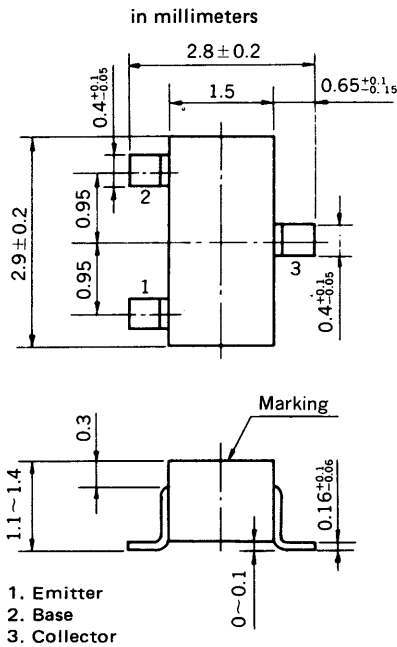


**HIGH FREQUENCY AMPLIFIER AND SWITCHING  
PNP SILICON EPITAXIAL TRANSISTOR  
MINI MOLD**

**PACKAGE DIMENSIONS**



**FEATURES**

- High Speed Switching:  $t_{stg} = 110$  ns
- High Gain Bandwidth Product :  $f_T = 510$  MHz
- Complementary to 2SC3734

**ABSOLUTE MAXIMUM RATINGS**

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

Collector to Base Voltage	$V_{CBO}$	-40	V
Collector to Emitter Voltage	$V_{CEO}$	-40	V
Emitter to Base Voltage	$V_{EBO}$	-5	V
Collector Current (DC)	$I_C$	-200	mA

Maximum Power Dissipation

Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature	$P_T$	200	mW
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Maximum Temperatures

Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

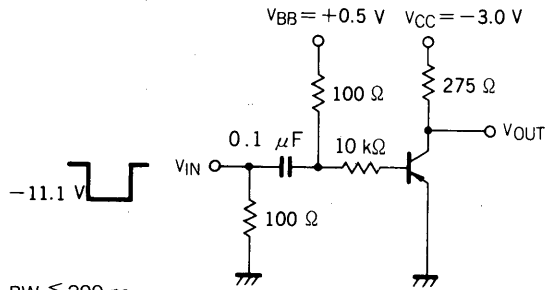
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB} = -30$ V, $I_E = 0$
Emitter Cutoff Current	$I_{EBO}$			-100	nA	$V_{EB} = -3.0$ V, $I_C = 0$
DC Current Gain	$h_{FE1}^*$	75	180	300		$V_{CE} = -1.0$ V, $I_C = -10$ mA
DC Current Gain	$h_{FE2}^*$	25	100			$V_{CE} = -10$ V, $I_C = -100$ mA
Collector Saturation Voltage	$V_{CE(sat)}^*$		-0.1	-0.4	V	$I_C = -50$ mA, $I_B = -5.0$ mA
Base Saturation Voltage	$V_{BE(sat)}^*$		-0.8	-0.95	V	$I_C = -50$ mA, $I_B = -5.0$ mA
Gain Bandwidth Product	$f_T$	200	510		MHz	$V_{CE} = -20$ V, $I_E = 10$ mA
Output Capacitance	$C_{ob}$		2.5	4.5	pF	$V_{CB} = -5.0$ V, $I_E = 0$ , $f = 1.0$ MHz
Turn-on Time	$t_{on}$			70	ns	$V_{CC} = -3.0$ V
Storage Time	$t_{stg}$		110	225	ns	$I_C = -10$ mA
Turn-off Time	$t_{off}$			300	ns	$I_{B1} = -I_{B2} = -1.0$ mA

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

**$h_{FE}$  Classification**

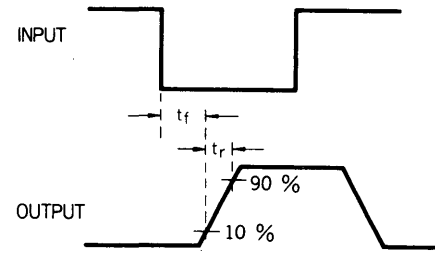
MARKING	Y22	Y23	Y24
$h_{FE1}$	75 to 150	100 to 200	150 to 300

SWITCHING TIME TEST CIRCUIT

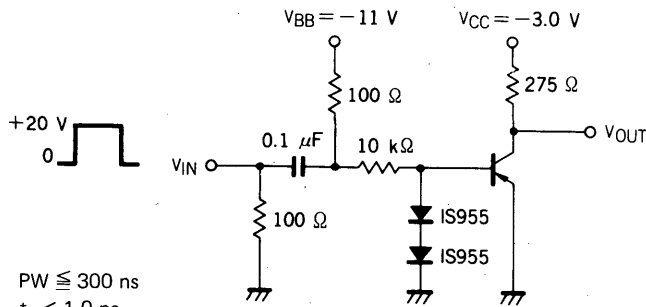


$PW \leq 300$  ns  
 $t_r < 1.0$  ns  
 $Z_{IN} = 50 \Omega$   
 Duty Cycle = 2 %

**$t_{on}$  SWITCHING**

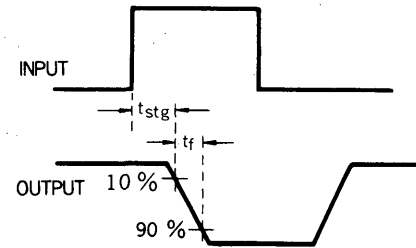


**VOLTAGE WAVEFORMS**



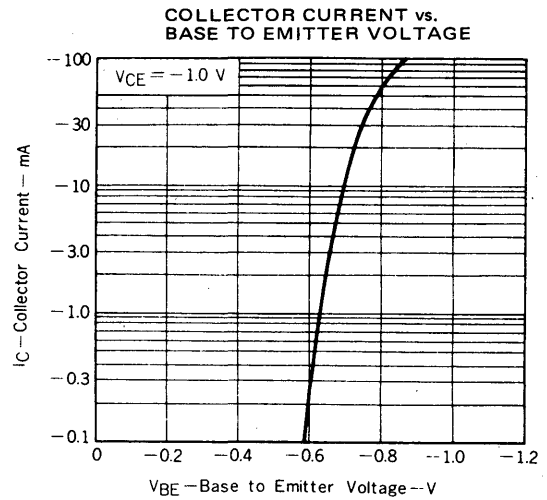
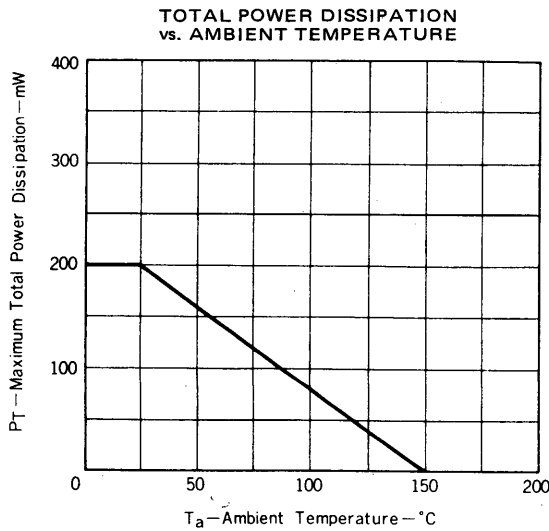
$PW \leq 300$  ns  
 $t_r < 1.0$  ns  
 Duty Cycle = 2 %

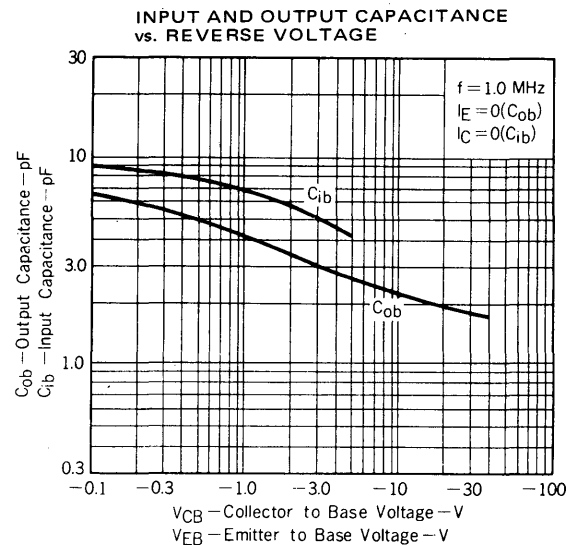
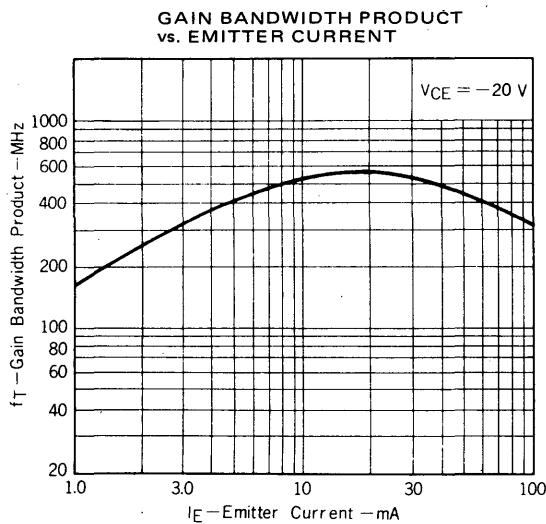
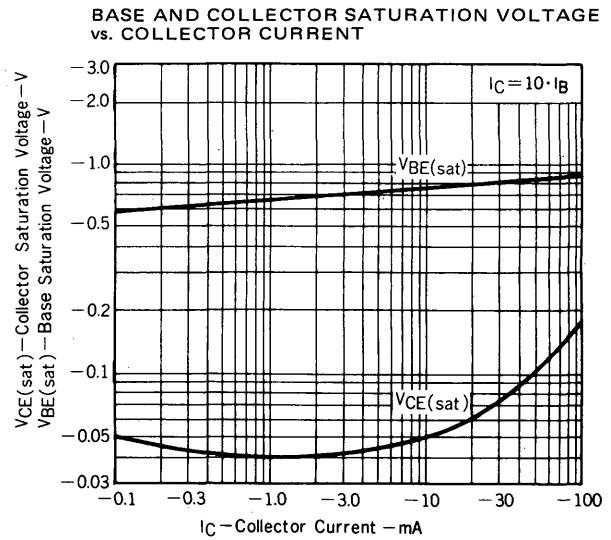
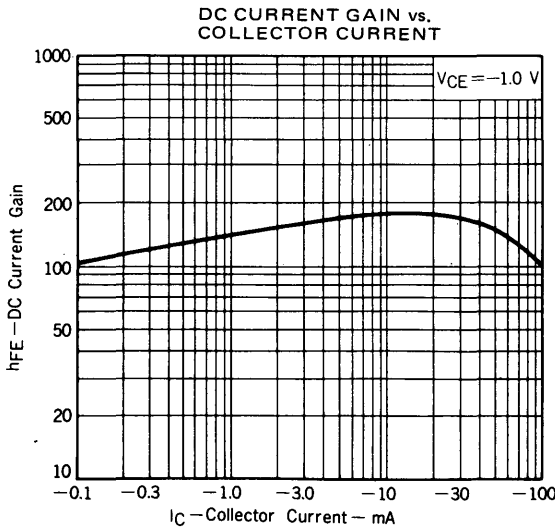
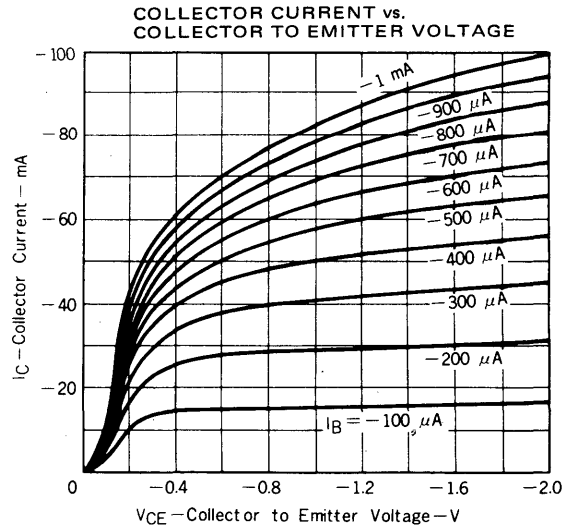
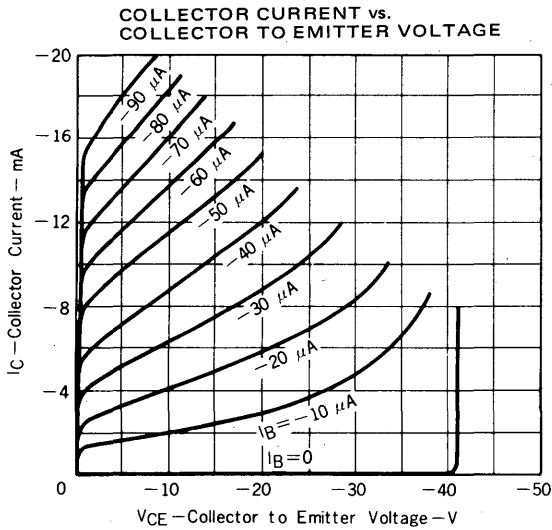
**$t_{off}$  SWITCHING**



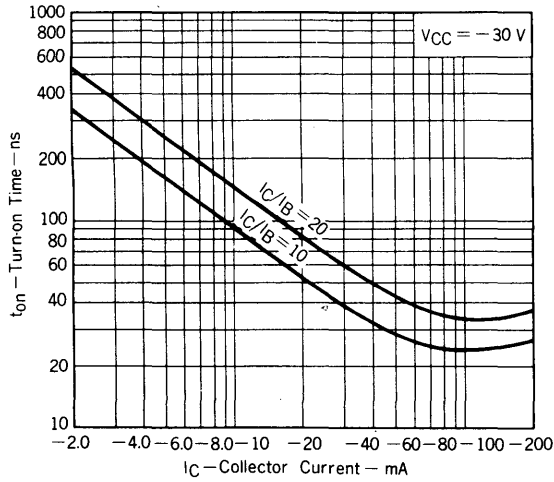
**VOLTAGE WAVEFORMS**

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

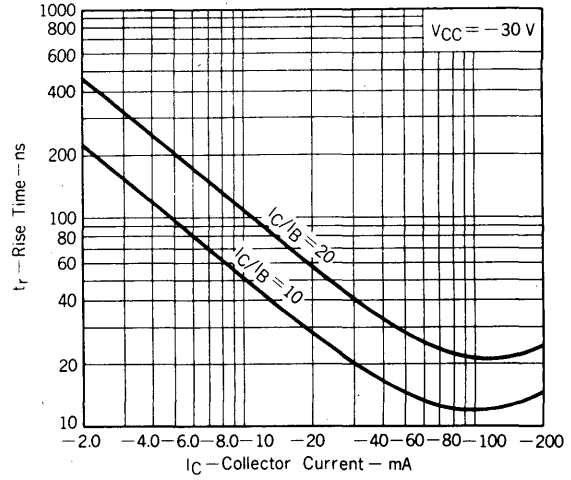




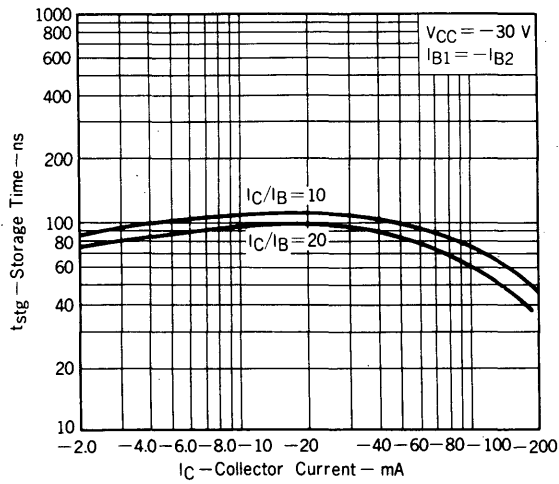
TURN-ON TIME vs. COLLECTOR CURRENT



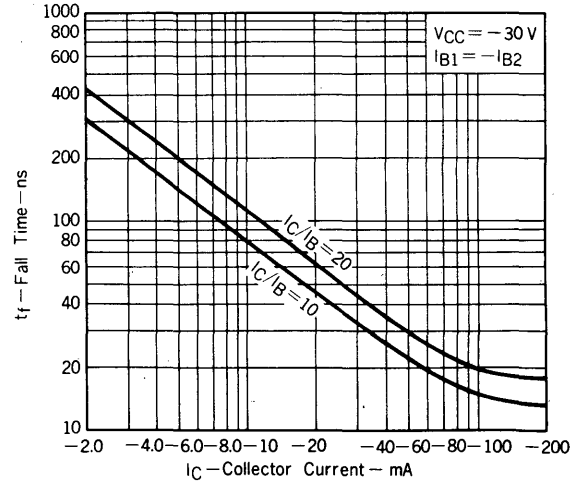
RISE TIME vs. COLLECTOR CURRENT



STORAGE TIME vs. COLLECTOR CURRENT



FALL TIME vs. COLLECTOR CURRENT



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