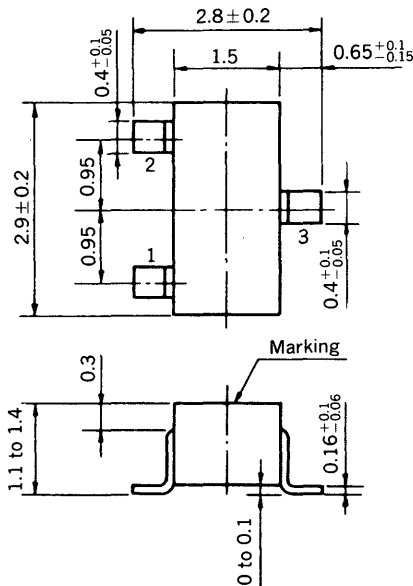


**MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE PNP TRANSISTOR
MINI MOLD**

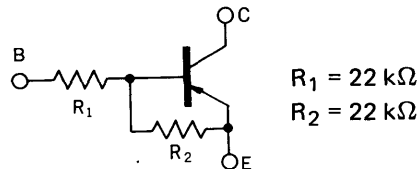
PACKAGE DIMENSIONS
 in millimeters


1. Emitter
2. Base
3. Collector

Marking: M32

FEATURES

- Resistors Built-in TYPE



$$R_1 = 22 \text{ k}\Omega$$

$$R_2 = 22 \text{ k}\Omega$$

- Complementary to FA1F4M

ABSOLUTE MAXIMUM RATINGSMaximum Voltages and Currents ($T_a = 25^\circ\text{C}$)

Collector to Base Voltage	V_{CB0}	-60	V
Collector to Emitter Voltage	V_{CEO}	-50	V
Emitter to Base Voltage	V_{EBO}	-10	V
Collector Current (DC)	$I_{C(DC)}$	-100	mA
Collector Current (Pulse)	$I_{C(Pulse)}$	-200	mA

Maximum Power Dissipation

Total Power Dissipation at 25°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	$^\circ\text{C}$

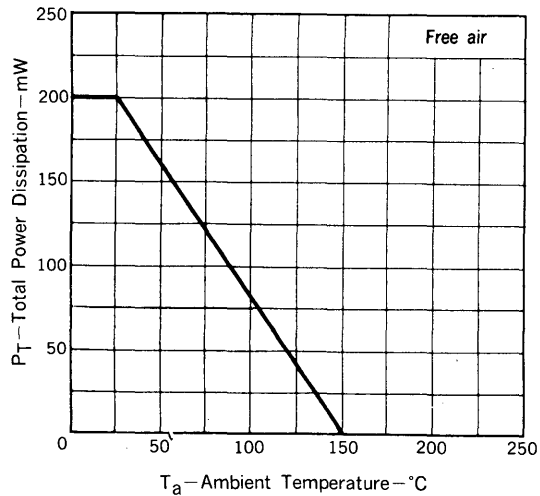
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	I_{CBO}			-100	nA	$V_{CB} = -50 \text{ V}, I_E = 0$
DC Current Gain	h_{FE1}^*	60	85	195		$V_{CE} = -5.0 \text{ V}, I_C = -5.0 \text{ mA}$
DC Current Gain	h_{FE2}^*	90	145			$V_{CE} = -5.0 \text{ V}, I_C = -50 \text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^*$		-0.05	-0.2	V	$I_C = -5.0 \text{ mA}, I_B = -0.25 \text{ mA}$
Low-Level Input Voltage	V_{IL}^*		-1.17	-0.8	V	$V_{CE} = -5.0 \text{ V}, I_C = -100 \mu\text{A}$
High-Level Input Voltage	V_{IH}^*	-4.0	-2.0		V	$V_{CE} = -0.2 \text{ V}, I_C = -5.0 \text{ mA}$
Input Resistor	R_1	15.4	22.0	28.6	k Ω	
Resistor Ratio	R_1/R_2	0.9	1.0	1.1		
Turn-on Time	t_{on}		0.23	0.5	μs	$V_{CC} = -5 \text{ V}, V_{in} = -5 \text{ V}$ $R_L = 1 \text{ k}\Omega$ $PW = 2 \mu\text{s}, \text{Duty Cycle} \leq 2\%$
Storage Time	t_{stg}		0.8	3.0	μs	
Turn-off Time	t_{off}		1.1	3.5	μs	

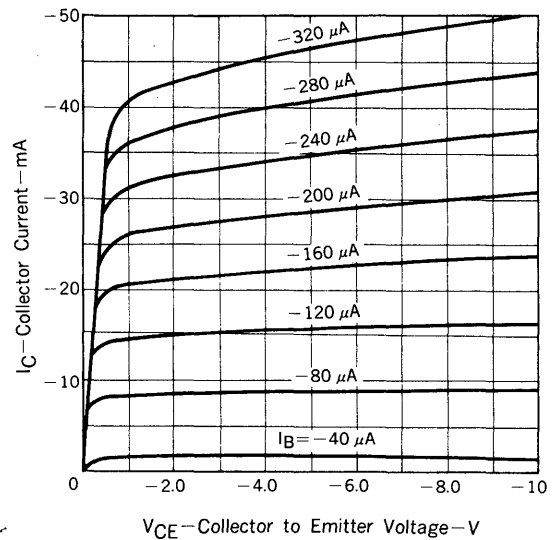
* Pulsed: $PW \leq 350 \mu\text{s}$, Duty Cycle $\leq 2\%$

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

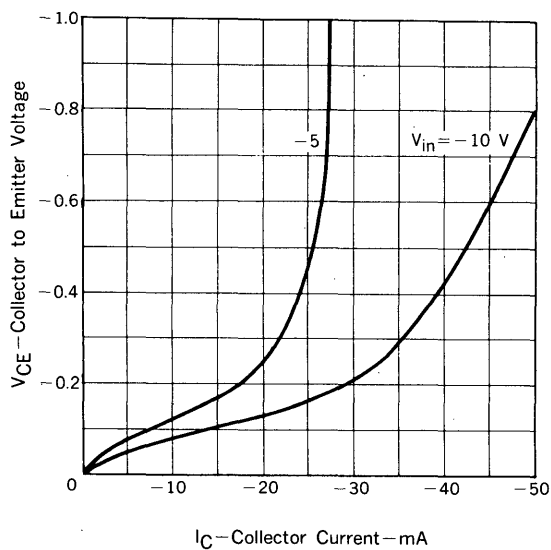
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



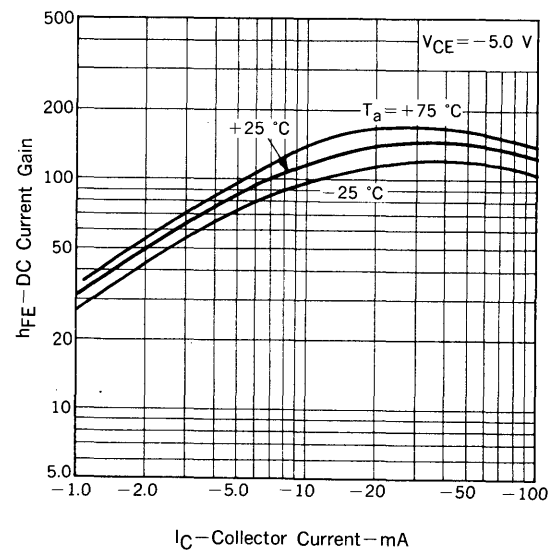
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



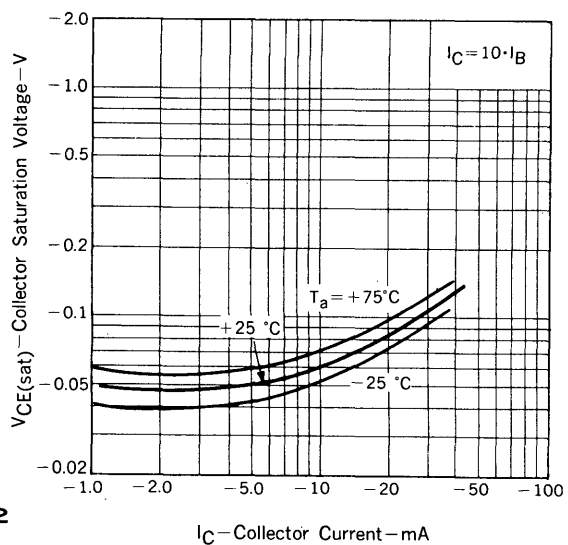
COLLECTOR TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



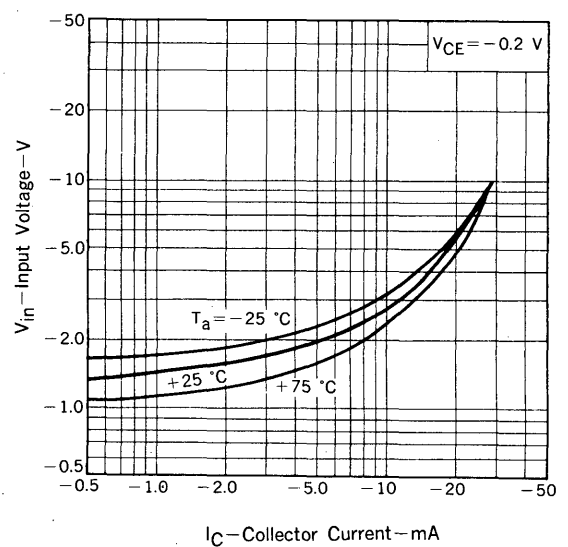
DC CURRENT GAIN vs. COLLECTOR CURRENT



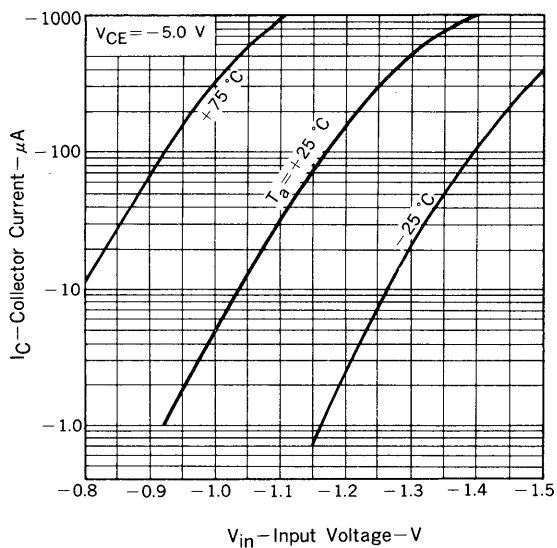
COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



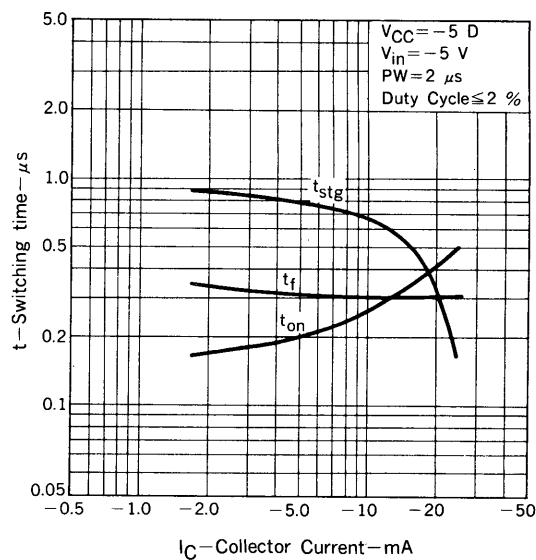
INPUT VOLTAGE vs. COLLECTOR CURRENT



COLLECTOR CURRENT vs.
INPUT VOLTAGE



SWITCHING TIME vs.
COLLECTOR CURRENT



RESISTOR vs.
AMBIENT TEMPERATURE

