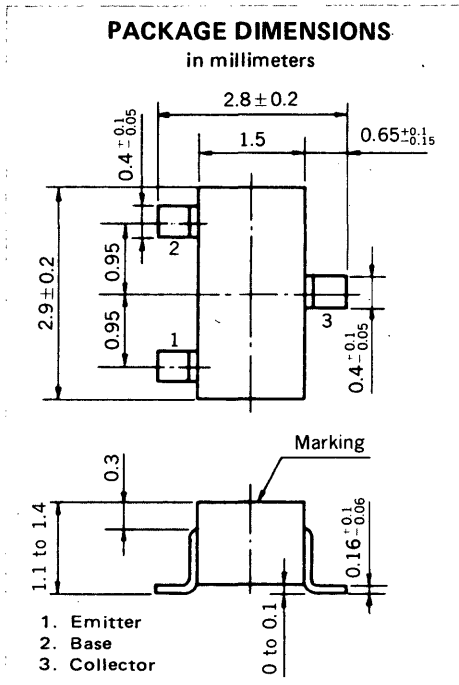
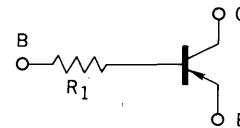


**MEDIUM SPEED SWITCHING**  
**RESISTOR BUILT-IN TYPE PNP TRANSISTOR**  
**MINI MOLD**



**FEATURES**

- Resistor Built-in TYPE



$R_1 = 47 \text{ k}\Omega$

- Complementary to FA1L4Z

**ABSOLUTE MAXIMUM RATINGS**

Maximum 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	$V_{EBO}$	-5	V
Collector Current (DC)	$I_C$	-100	mA
Collector Current (Pulse)	$I_C$	-200	mA
Maximum Power Dissipation			
Total Power Dissipation			
at $25^\circ\text{C}$ Ambient Temperature	$P_T$	200	mW
Maximum Temperatures			
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

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

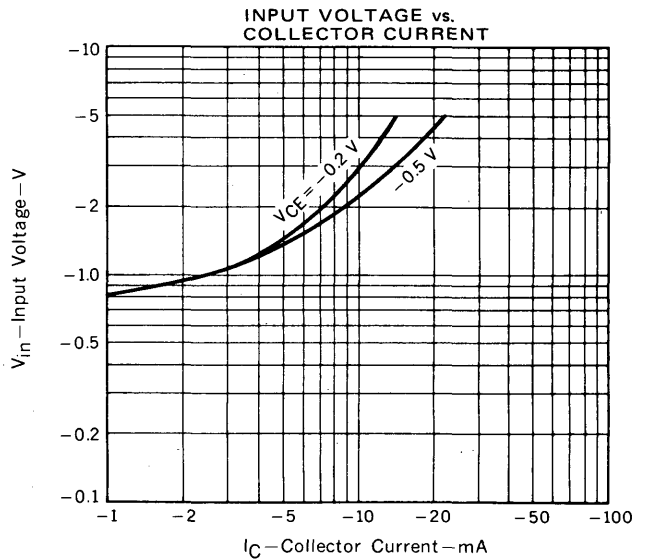
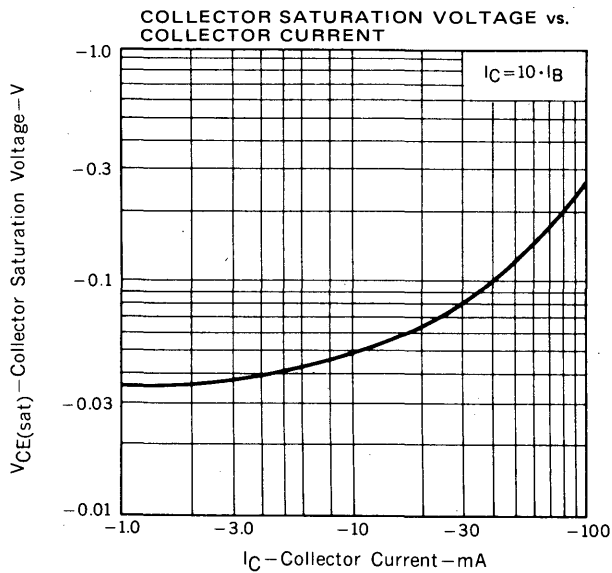
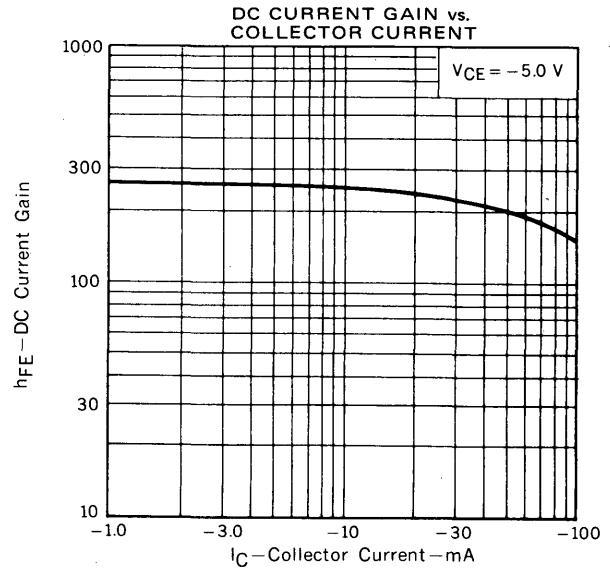
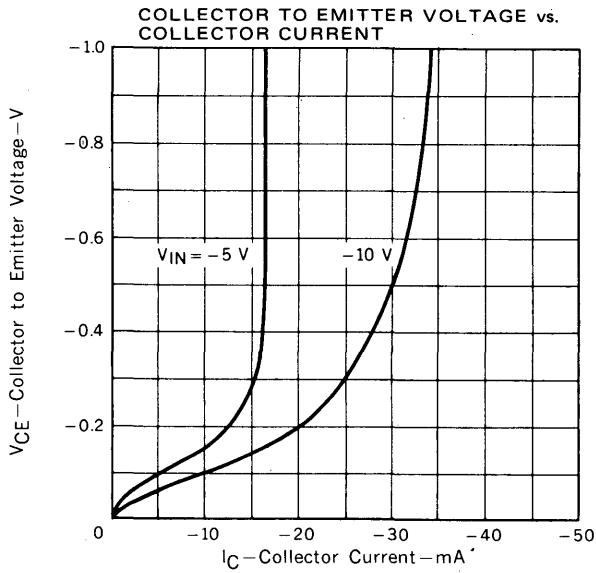
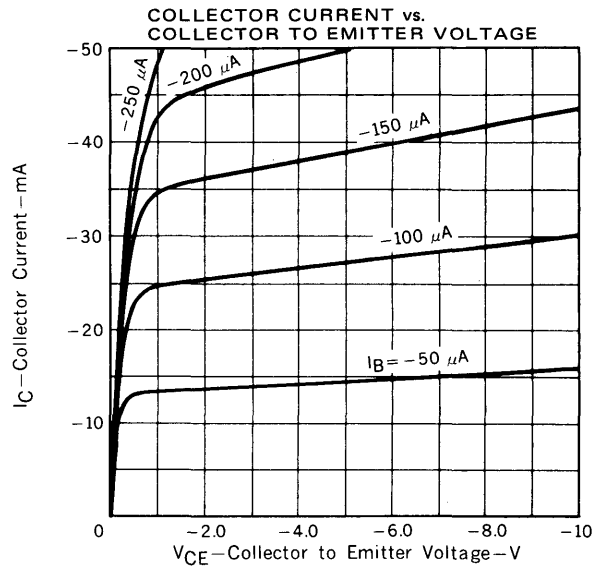
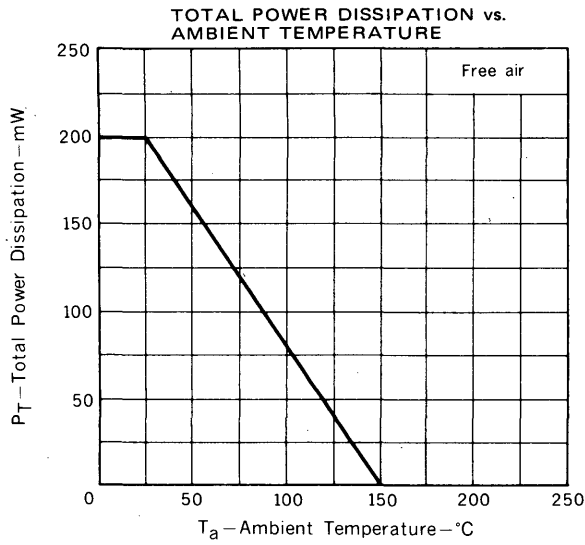
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Cutoff Current	$I_{CBO}$			-100	nA	$V_{CB} = -50 \text{ V}, I_E = 0$
DC Current Gain	$h_{FE1}^*$	135	230	600		$V_{CE} = -5.0 \text{ V}, I_C = -5.0 \text{ mA}$
DC Current Gain	$h_{FE2}^*$	100	190			$V_{CE} = -5.0 \text{ V}, I_C = -50 \text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^*$		-0.07	-0.2	V	$I_C = -5.0 \text{ mA}, I_B = -0.25 \text{ mA}$
Low-Level Input Voltage	$V_{IL}^*$		-0.58	-0.5	V	$V_{CE} = -5.0 \text{ V}, I_C = -100 \mu\text{A}$
High-Level Input Voltage	$V_{IH}^*$	-4.0	-1.8		V	$V_{CE} = -0.2 \text{ V}, I_C = -5.0 \text{ mA}$
Input Resistor	$R_1$	32.9	47.0	61.1	$\text{k}\Omega$	
Turn-on Time	$t_{on}$			0.2	$\mu\text{s}$	$V_{CC} = -5 \text{ V}, V_{in} = -5 \text{ V}$ $R_L = 1 \text{ k}\Omega$ $PW = 2 \mu\text{s}, \text{Duty Cycle} \leq 2\%$
Storage Time	$t_{stg}$			5.0	$\mu\text{s}$	
Turn-off Time	$t_{off}$			6.0	$\mu\text{s}$	

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

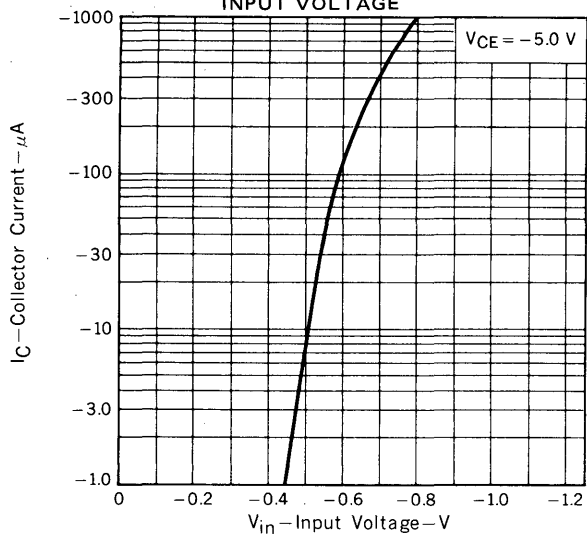
**$h_{FE}$  Classification**

Marking	M61	M62	M63
$h_{FE1}$	135 to 270	200 to 400	300 to 600

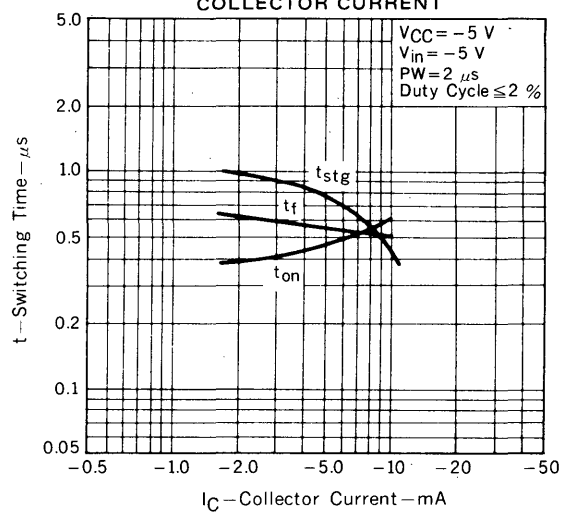
TYPICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )



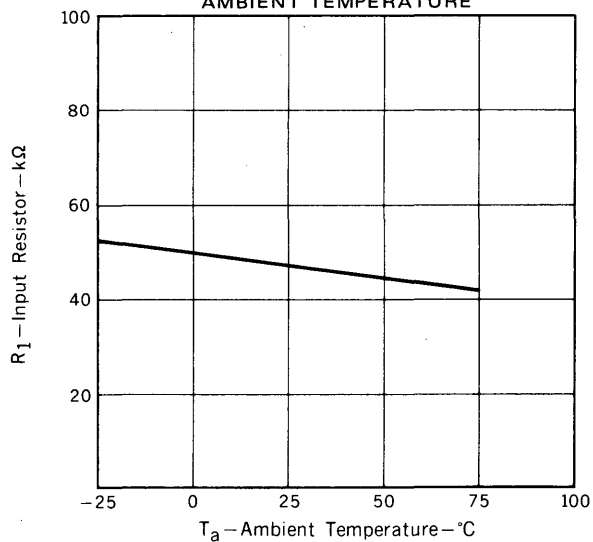
COLLECTOR CURRENT vs. INPUT VOLTAGE



SWITCHING TIME vs. COLLECTOR CURRENT



RESISTOR vs. AMBIENT TEMPERATURE







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