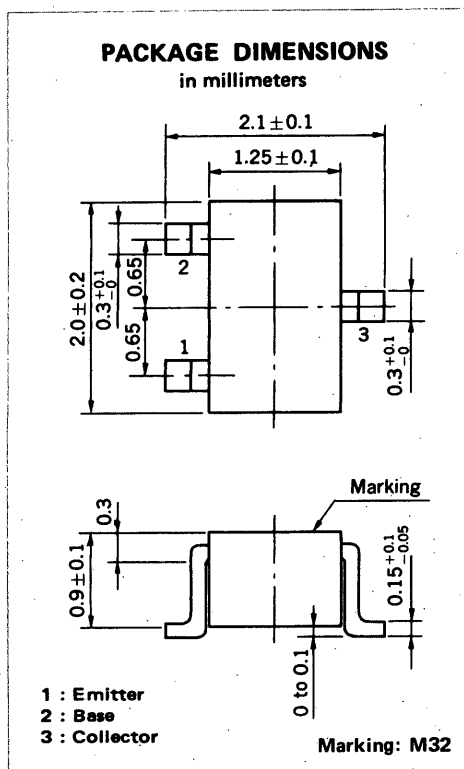
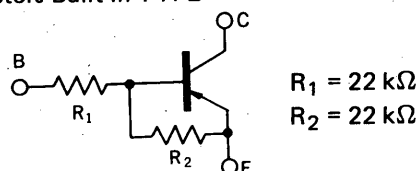


**MEDIUM SPEED SWITCHING**  
**RESISTOR BUILT-IN TYPE PNP TRANSISTOR**



**FEATURES**

- Resistors Built-in TYPE



- Complementary to GA1F4M

**ABSOLUTE MAXIMUM RATINGS**

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

|                              |                |      |    |
|------------------------------|----------------|------|----|
| Collector to Base Voltage    | $V_{CBO}$      | -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<br>at $25^\circ\text{C}$ Ambient Temperature | $P_T$ | 150 | mW |
|----------------------------------------------------------------------|-------|-----|----|

Maximum Temperatures

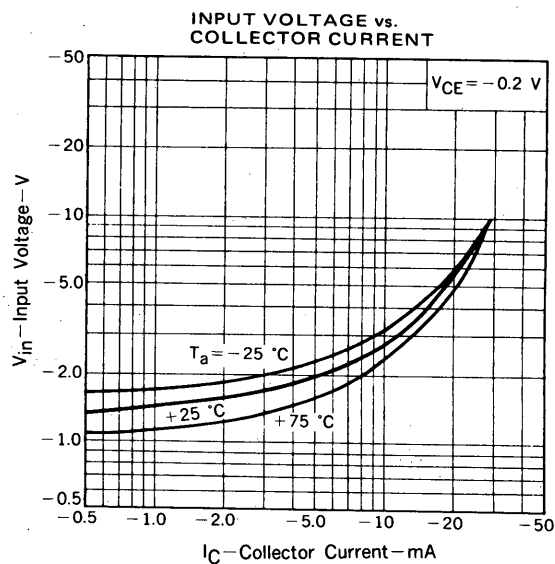
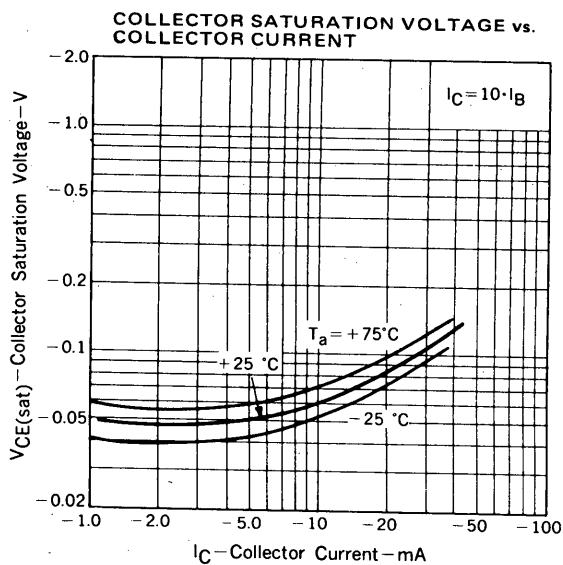
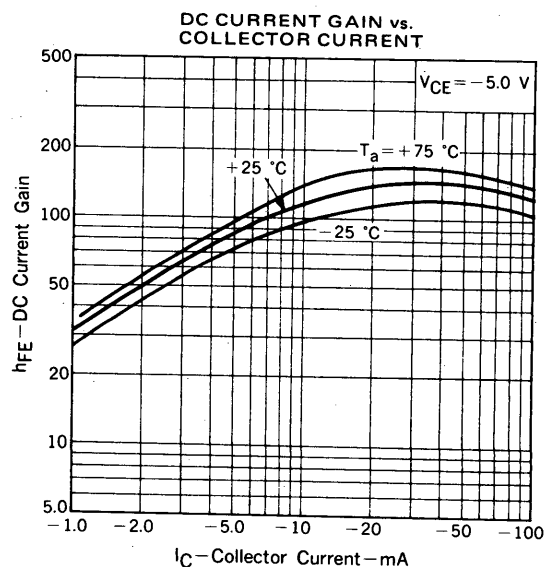
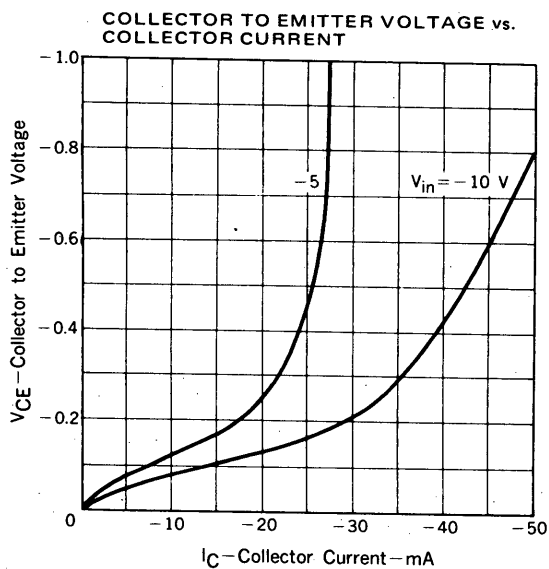
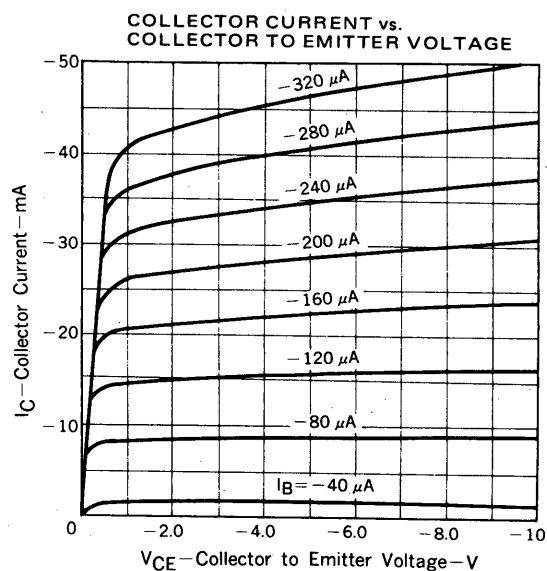
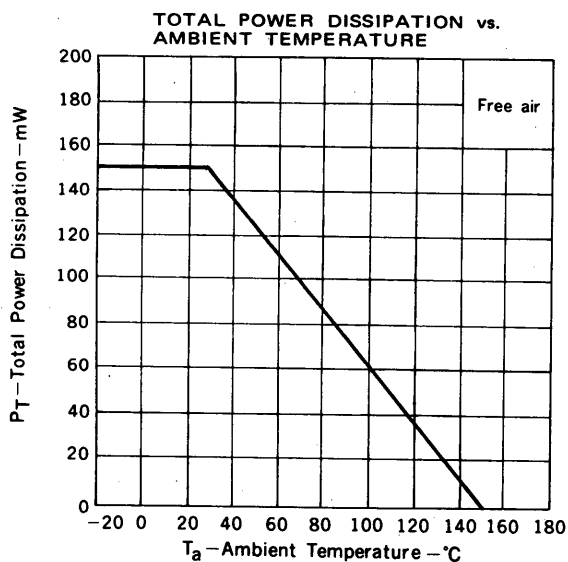
|                           |           |             |                  |
|---------------------------|-----------|-------------|------------------|
| Junction Temperature      | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage Temperature Range | $T_{stg}$ | -55 to +150 | $^\circ\text{C}$ |

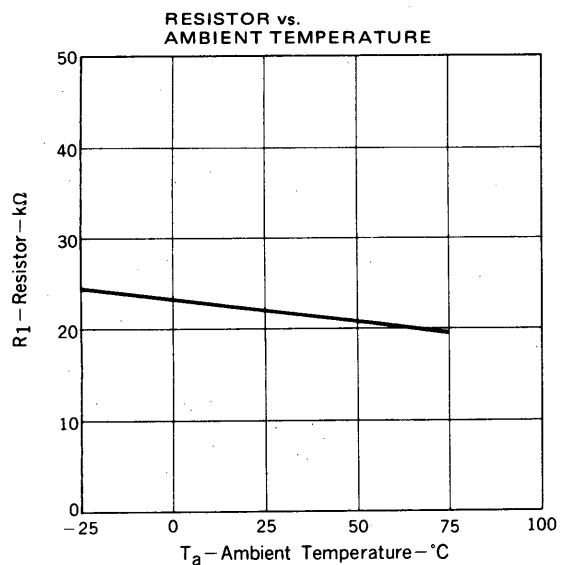
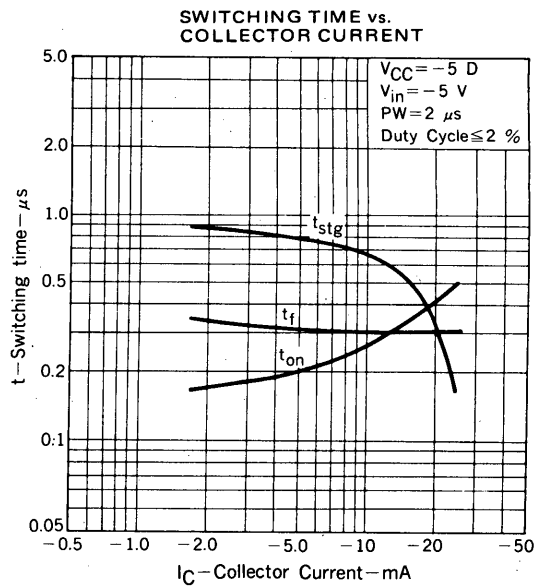
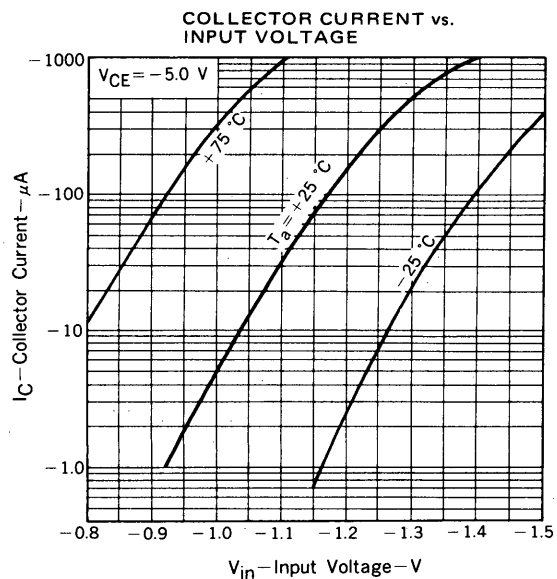
**ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )**

| 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              | $h_{FE1}^*$     | 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 | $\text{k}\Omega$ |                                                                                                                                 |
| Resistor Ratio               | $R_1/R_2$       | 0.9  | 1.0   | 1.1  |                  |                                                                                                                                 |
| Turn-on Time                 | $t_{on}$        |      | 0.23  | 0.5  | $\mu\text{s}$    | $V_{CC} = -5 \text{ V}, V_{in} = -5 \text{ V}$<br>$R_L = 1 \text{ k}\Omega$<br>$PW = 2 \mu\text{s}, \text{Duty Cycle} \leq 2\%$ |
| Storage Time                 | $t_{stg}$       |      | 0.8   | 3.0  | $\mu\text{s}$    |                                                                                                                                 |
| Turn-off Time                | $t_{off}$       |      | 1.1   | 3.5  | $\mu\text{s}$    |                                                                                                                                 |

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

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





[MEMO]

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