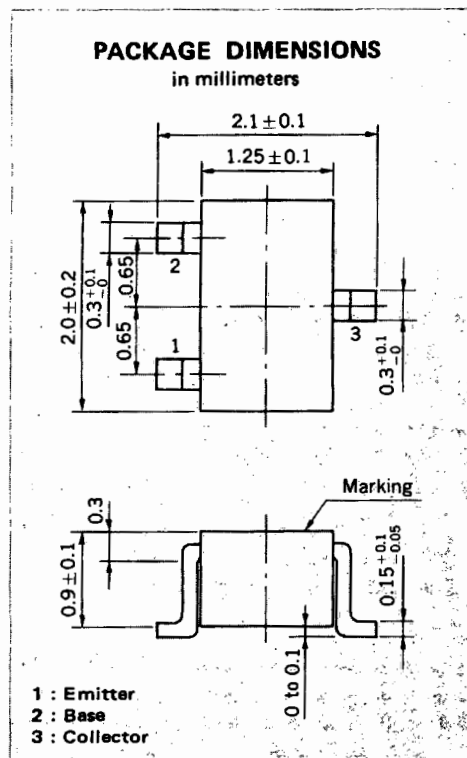


SILICON TRANSISTOR

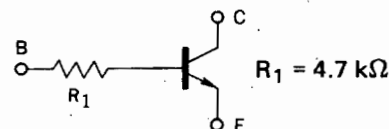
GA1L3Z

MEDIUM SPEED SWITCHING RESISTOR BUILT-IN TYPE NPN TRANSISTOR



FEATURES

- Resistor Built-in TYPE



- Complementary to GN1L3Z

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_{EB0}	5	V
Collector Current (DC)	I_C	100	mA
Collector Current (Pulse)	I_{Cp}	200	mA

Maximum Power Dissipation

Total Power Dissipation at 25°C Ambient Temperature	P_T	150	mW
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Maximum Temperatures

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

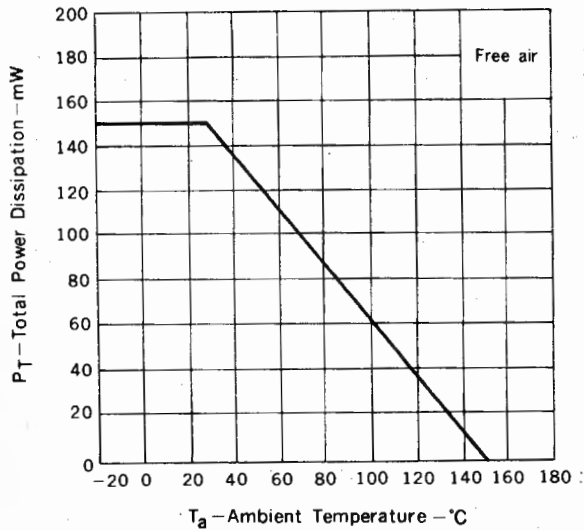
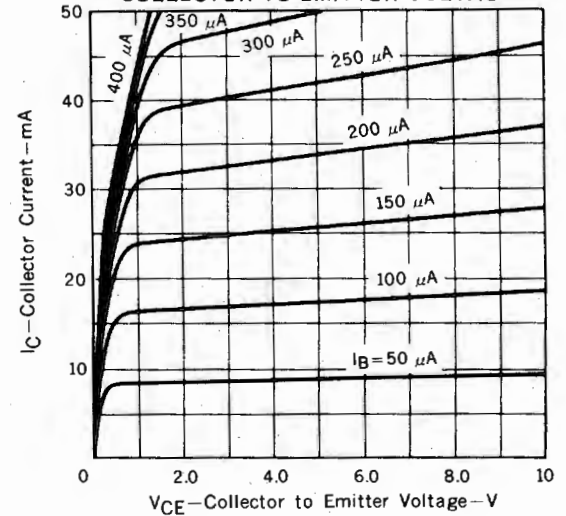
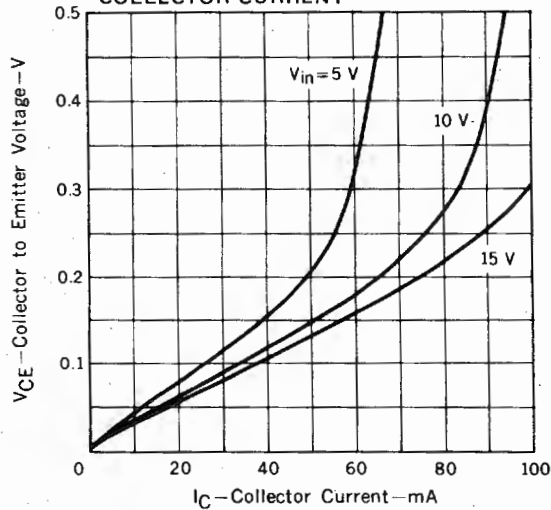
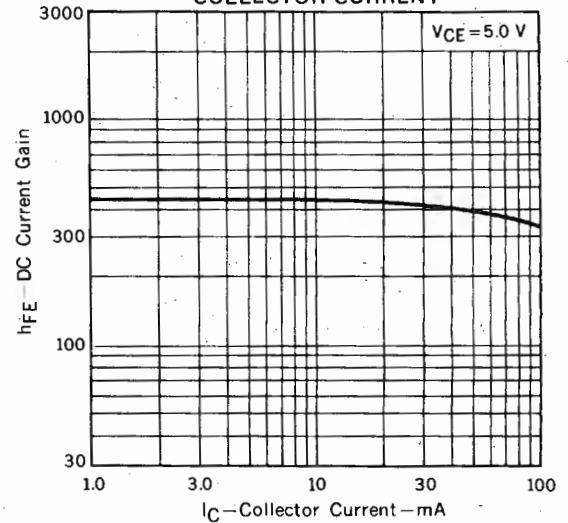
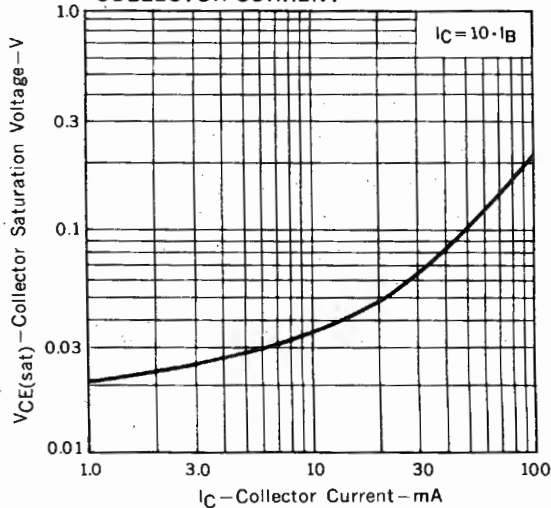
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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}^*	135	450	600		$V_{CE} = 5.0\text{ V}, I_C = 5.0\text{ mA}$
DC Current Gain	h_{FE2}^*	100	380			$V_{CE} = 5.0\text{ V}, I_C = 50\text{ mA}$
Collector Saturation Voltage	$V_{CE(sat)}^*$		0.04	0.2	V	$I_C = 5.0\text{ mA}, I_B = 0.25\text{ mA}$
Low-Level Input Voltage	V_{IL}^*		0.54	0.5	V	$V_{CE} = 5.0\text{ V}, I_C = 100\text{ }\mu\text{A}$
High-Level Input Voltage	V_{IH}^*	1.2	0.71		V	$V_{CE} = 0.2\text{ V}, I_C = 5.0\text{ mA}$
Input Resistor	R_1	3.29	4.7	6.11	k Ω	
Turn-on Time	t_{on}		0.03	0.2	μs	$V_{CC} = 5\text{ V}, V_{in} = 5\text{ V}$ $R_L = 1\text{ k}\Omega$ $PW = 2\text{ }\mu\text{s}, \text{Duty Cycle} \leq 2\%$
Storage Time	t_{stg}		3.2	5.0	μs	
Turn-off Time	t_{off}		3.4	6.0	μs	

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

h_{FE} Classification

Marking	L36	L37	L38
h_{FE1}	135 to 270	200 to 400	300 to 600

TYPICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)TOTAL POWER DISSIPATION vs.
AMBIENT TEMPERATURECOLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGECOLLECTOR TO EMITTER VOLTAGE vs.
COLLECTOR CURRENTDC CURRENT GAIN vs.
COLLECTOR CURRENTCOLLECTOR SATURATION VOLTAGE vs.
COLLECTOR CURRENTINPUT VOLTAGE vs.
COLLECTOR CURRENT