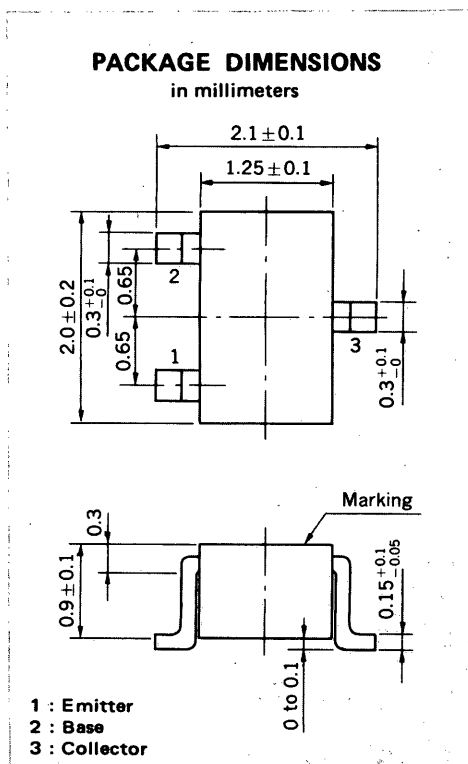
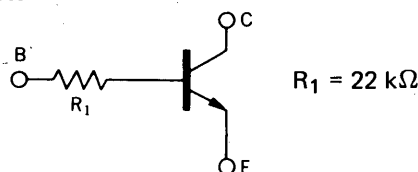


**MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE NPN TRANSISTOR**



FEATURES

- Resistor Built-in TYPE



- Complementary to GN1F4Z

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°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	330	600		$V_{CE} = 5.0 \text{ V}, I_C = 5.0 \text{ mA}$
DC Current Gain	h_{FE2}^*	100	290			$V_{CE} = 5.0 \text{ V}, I_C = 50 \text{ mA}$
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}^*		0.55	0.5	V	$V_{CE} = 5.0 \text{ V}, I_C = 100 \mu\text{A}$
High-Level Input Voltage	V_{IH}^*	3.0	1.05		V	$V_{CE} = 0.2 \text{ V}, I_C = 5.0 \text{ mA}$
Input Resistor	R_1	15.4	22	28.6	$\text{k}\Omega$	
Turn-on Time	t_{on}			0.2	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}			5.0	μs	
Turn-off Time	t_{off}			6.0	μs	

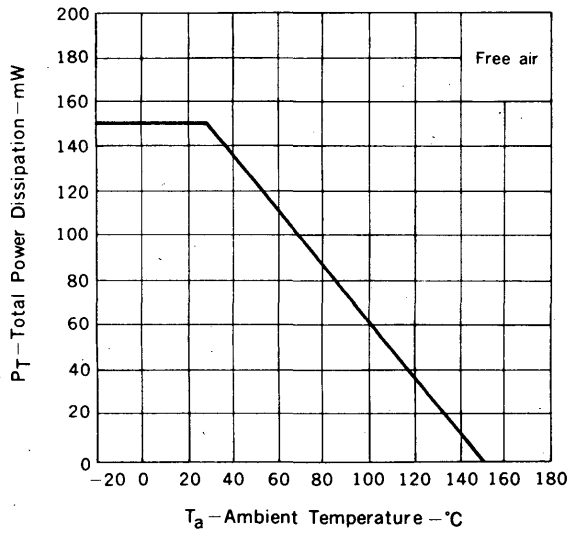
* Pulsed: $PW \leq 350 \mu\text{s}, \text{Duty Cycle} \leq 2\%$

h_{FE} Classification

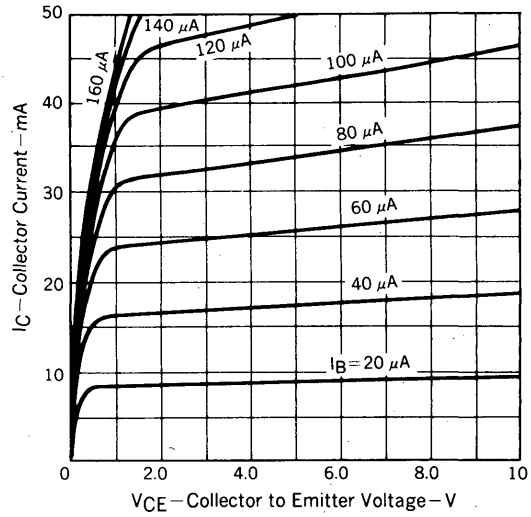
Marking	L64	L65	L66
h_{FE1}	135 to 270	200 to 400	300 to 600

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

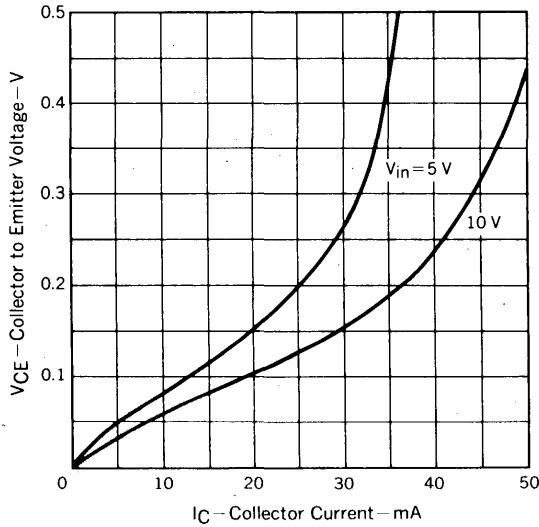
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



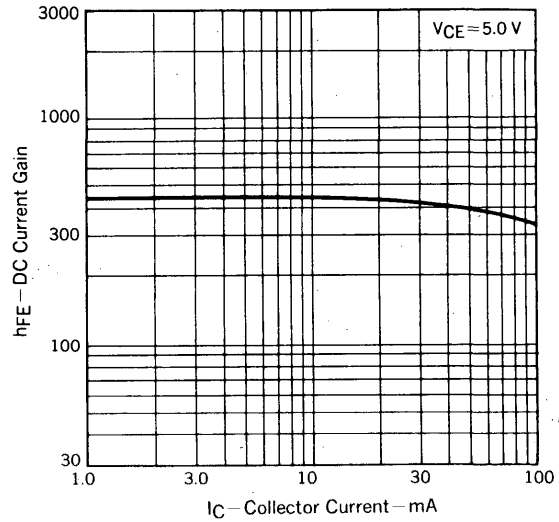
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



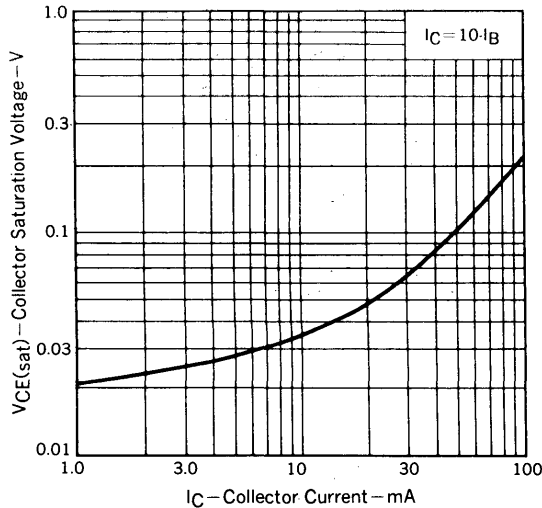
COLLECTOR TO EMITTER VOLTAGE vs. COLLECTOR CURRENT



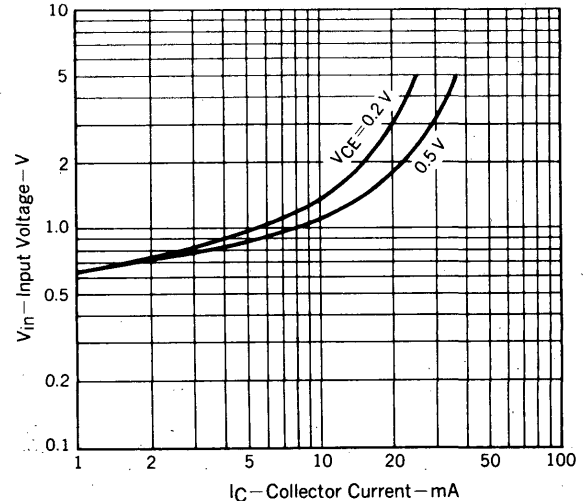
DC CURRENT GAIN vs. COLLECTOR CURRENT

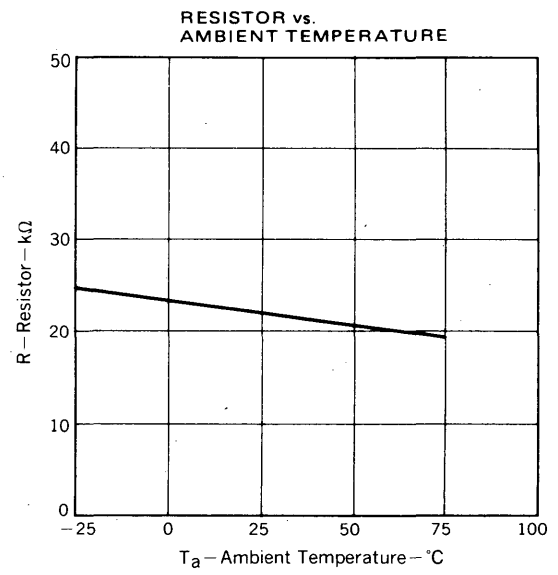
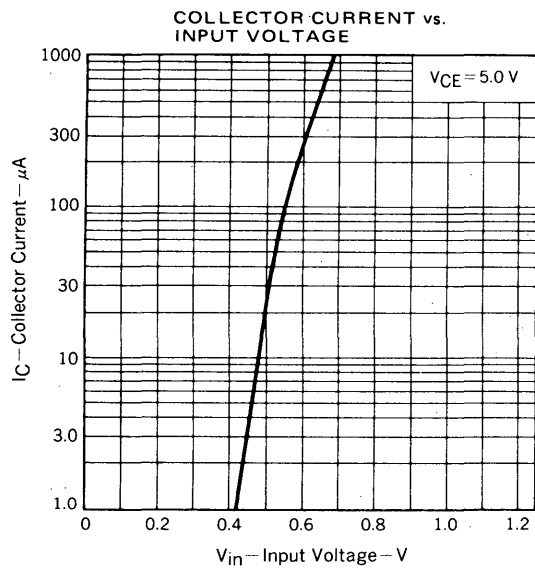


COLLECTOR SATURATION VOLTAGE vs. COLLECTOR CURRENT



INPUT VOLTAGE vs. COLLECTOR CURRENT







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