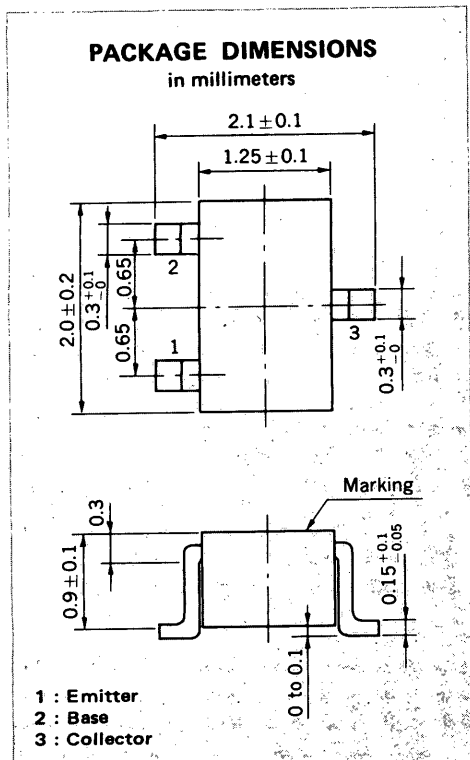
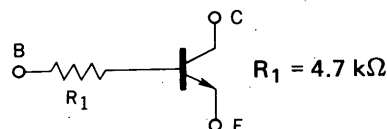


**MEDIUM SPEED SWITCHING**  
**RESISTOR BUILT-IN TYPE NPN TRANSISTOR**
**FEATURES**

- Resistor Built-in TYPE



- Complementary to GN1L3Z

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

Collector to Base Voltage	$V_{CBO}$	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	$P_T$	150	mW
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Maximum Temperatures

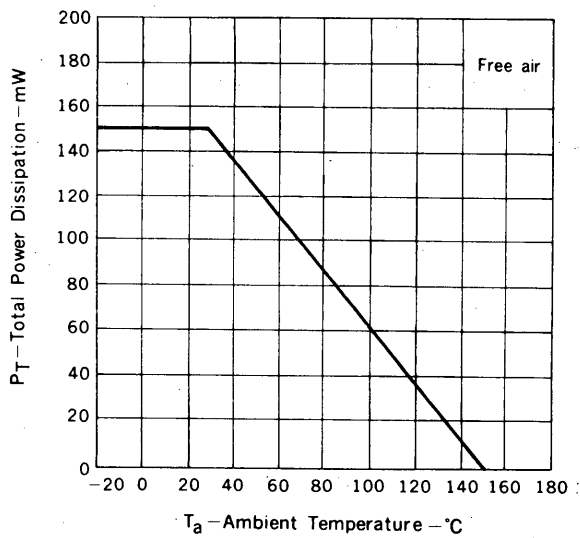
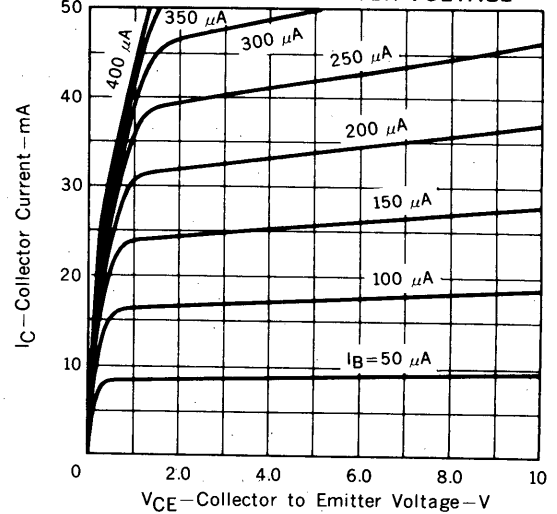
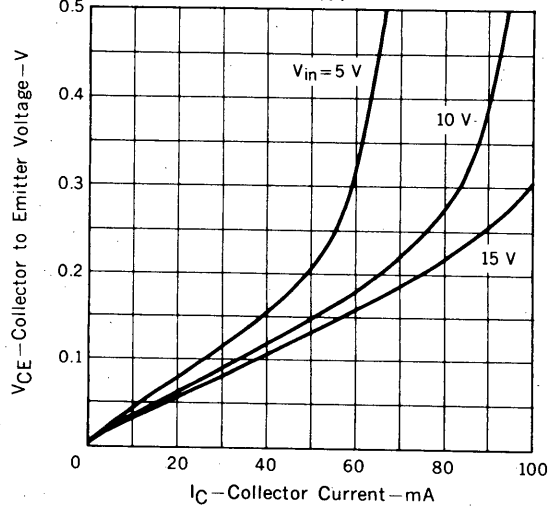
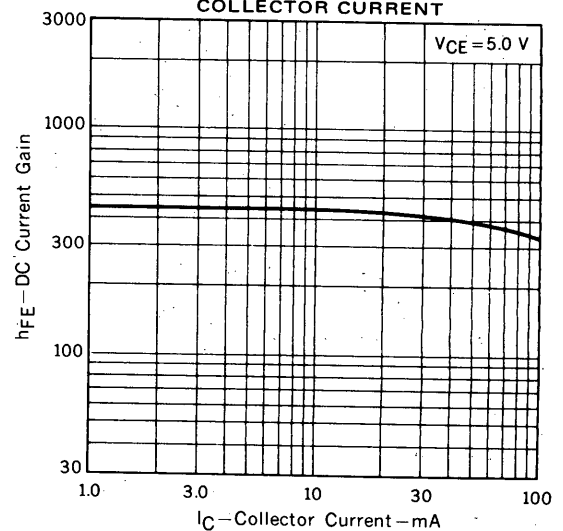
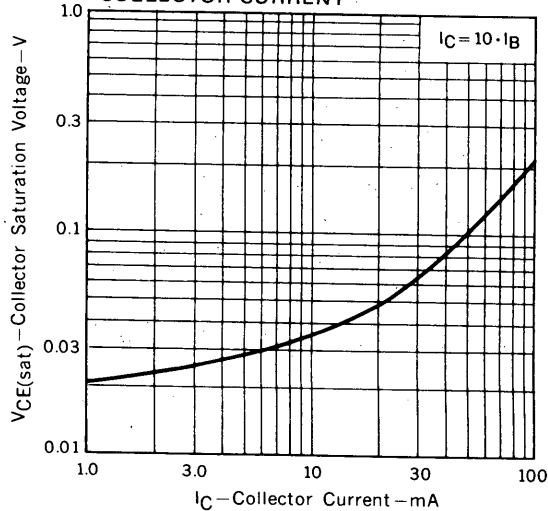
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

**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 $\Omega$	
Turn-on Time	$t_{on}$		0.03	0.2	$\mu\text{s}$	$V_{CC} = 5\text{ V}, V_{in} = 5\text{ V}$ $R_L = 1\text{ k}\Omega$ $PW = 2\text{ }\mu\text{s}, \text{Duty Cycle} \leq 2\%$
Storage Time	$t_{stg}$		3.2	5.0	$\mu\text{s}$	
Turn-off Time	$t_{off}$		3.4	6.0	$\mu\text{s}$	

\* 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