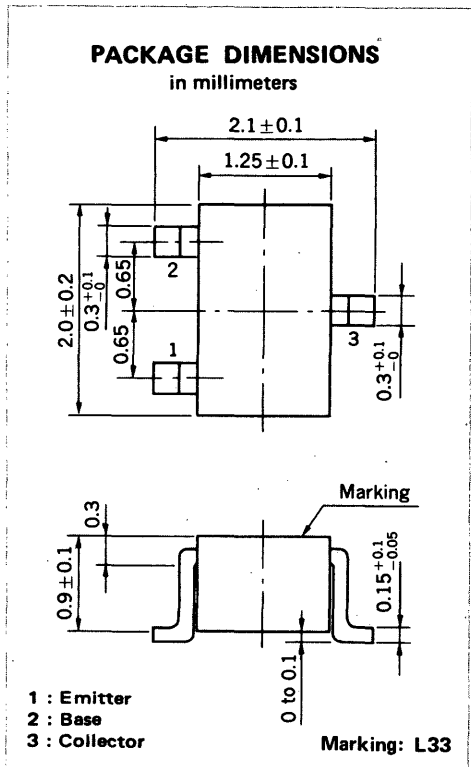
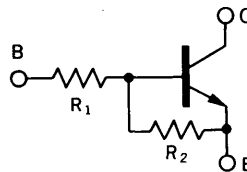


MEDIUM SPEED SWITCHING  
RESISTOR BUILT-IN TYPE NPN TRANSISTOR



**FEATURES**

- Resistors Built-in TYPE



$R_1 = 10 \text{ k}\Omega$   
 $R_2 = 10 \text{ k}\Omega$

- Complementary to GN1A4M

**ABSOLUTE MAXIMUM RATINGS**

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

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)	$I_C$	100	mA
Collector Current (Pulse)	$I_C$	200	mA

Maximum Power Dissipation

Total Power Dissipation at $25 \text{ }^\circ\text{C}$ 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 ( $T_a = 25 \text{ }^\circ\text{C}$ )**

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	$h_{FE1}^*$	35	62	100		$V_{CE} = 5.0 \text{ V}, I_C = 5.0 \text{ mA}$
DC Current Gain	$h_{FE2}^*$	80	230			$V_{CE} = 5.0 \text{ V}, I_C = 50 \text{ mA}$
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	$V_{IL}^*$		1.08	0.8	V	$V_{CE} = 5.0 \text{ V}, I_C = 100 \text{ }\mu\text{A}$
High-Level Input Voltage	$V_{IH}^*$	3.0	1.4		V	$V_{CE} = 0.2 \text{ V}, I_C = 5.0 \text{ mA}$
Input Resistor	$R_1$	7.0	10	13	$\text{k}\Omega$	
Resistor Ratio	$R_1/R_2$	0.9	1.0	1.1		
Turn-on Time	$t_{on}$		0.06	0.2	$\mu\text{s}$	$V_{CC} = 5 \text{ V}, V_{in} = 5 \text{ V}$
Storage Time	$t_{stg}$		2.0	5.0	$\mu\text{s}$	$R_L = 1 \text{ k}\Omega$
Turn-off Time	$t_{off}$		2.15	6.0	$\mu\text{s}$	$PW = 2 \text{ }\mu\text{s}, \text{Duty Cycle} \leq 2 \%$

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

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

