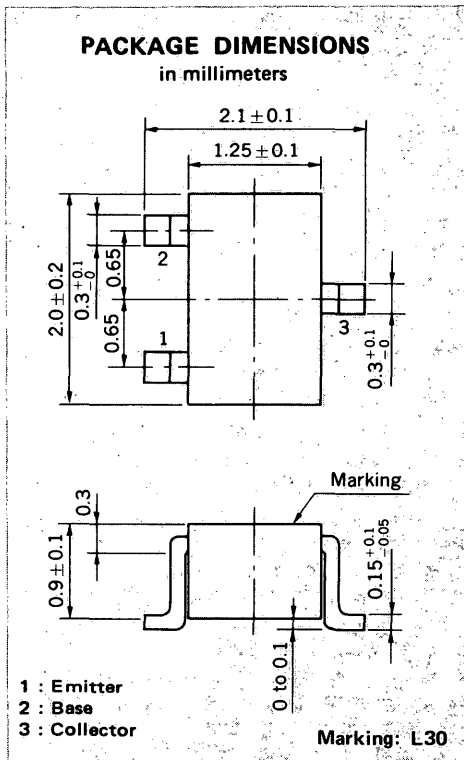
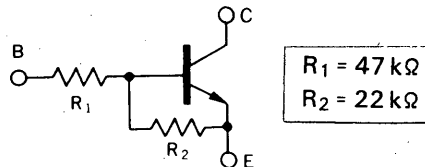


**MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE NPN TRANSISTOR**



FEATURES

- Resistors Built-in TYPE



- Complementary to GN1L4L

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_{CE0}	50	V
Emitter to Base Voltage	V_{EB0}	15	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
--	-------	-----	----

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	120	195		$V_{CE} = 5.0 \text{ V}, I_C = 5.0 \text{ mA}$
DC Current Gain	h_{FE2}^*	90	340			$V_{CE} = 5.0 \text{ V}, I_C = 50 \text{ mA}$
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}^*		1.7	0.9	V	$V_{CE} = 5.0 \text{ V}, I_C = 100 \mu\text{A}$
High-Level Input Voltage	V_{IH}^*	6.0	2.5		V	$V_{CE} = 0.2 \text{ V}, I_C = 5.0 \text{ mA}$
Input Resistor	R_1	32.9	47.0	61.1	$\text{k}\Omega$	
E-B Resistor	R_2	15.4	22.0	28.6	$\text{k}\Omega$	
Turn-on Time	t_{on}		0.38	1.0	μs	$V_{CC} = 5 \text{ V}, V_{in} = 5 \text{ V}$
Storage Time	t_{stg}		1.2	3.0	μs	$R_L = 1 \text{ k}\Omega$
Turn-off Time	t_{off}		1.6	5.0	μs	$PW = 2 \mu\text{s}, \text{Duty Cycle} \leq 2\%$

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

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

