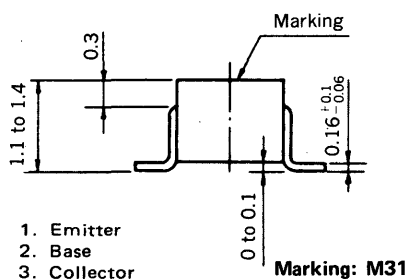
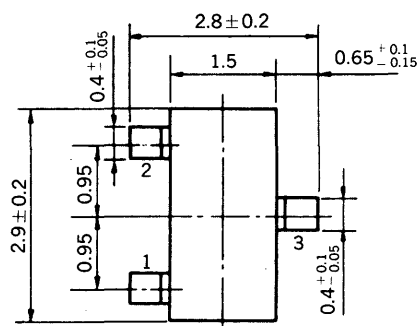


**MEDIUM SPEED SWITCHING
RESISTOR BUILT-IN TYPE PNP TRANSISTOR
MINI MOLD**

PACKAGE DIMENSIONS
in millimeters

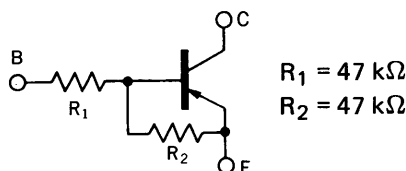


1. Emitter
2. Base
3. Collector

Marking: M31

FEATURES

- Resistors Built-in TYPE



- Complementary to FA1L4M

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}	-10	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	200	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}^*	85	135	340		$V_{CE} = -5.0\text{ V}, I_C = -5.0\text{ mA}$
DC Current Gain	h_{FE2}^*	95	180			$V_{CE} = -5.0\text{ V}, I_C = -50\text{ mA}$
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}^*		-1.17	-0.8	V	$V_{CE} = -5.0\text{ V}, I_C = -100\text{ }\mu\text{A}$
High-Level Input Voltage	V_{IH}^*	-5.0	-2.4		V	$V_{CE} = -0.2\text{ V}, I_C = -5.0\text{ mA}$
Input Resistor	R_1	32.9	47.0	61.1	k Ω	
Resistor Ratio	R_1/R_2	0.9	1.0	1.1		
Turn-on Time	t_{on}		0.5	1.0	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}		0.8	3.0	μs	
Turn-off Time	t_{off}		1.4	4.0	μs	

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

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

