

UNR8231/8231A (UN8231/8231A)

Silicon NPN epitaxial planar type

For switching

■ Features

- High forward current transfer ratio h_{FE}
- Resistor built-in type, allowing downsizing of the equipment and reduction of the number of parts
- Available in a type with radial tapering

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	20	V
		60	
Collector-emitter voltage (Base open)	V_{CEO}	20	V
		50	
Collector current	I_C	0.7	A
Peak collector current	I_{CP}	1.5	A
Total power dissipation *	P_T	1	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

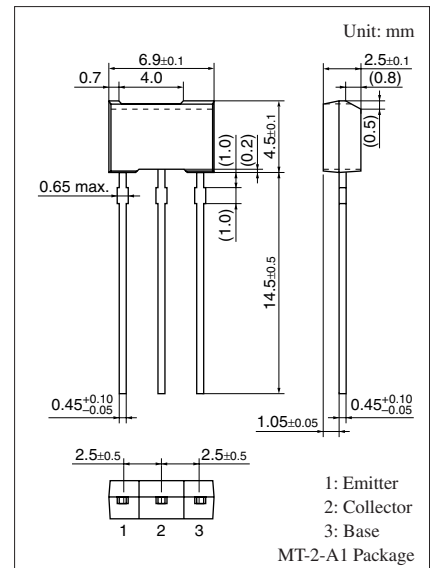
Note) *: Printed circuit board: Copper foil area of 1 cm² or more, and the board thickness of 1.7 mm for the collector portion

■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

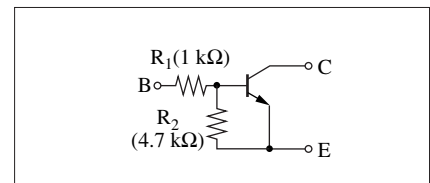
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = 10\ \mu\text{A}, I_E = 0$	20			V
			60			
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 1\ \text{mA}, I_B = 0$	20			V
			50			
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 15\ \text{V}, I_E = 0$			1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 15\ \text{V}, I_B = 0$			10	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 14\ \text{V}, I_C = 0$			0.5	mA
Forward current transfer ratio *	h_{FE}	$V_{CE} = 10\ \text{V}, I_C = 150\ \text{mA}$	800		2 100	—
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 500\ \text{mA}, I_B = 5\ \text{mA}$			0.4	V
Input resistance	R_1		0.7	1.0	1.3	k Ω
Resistance ratio	R_1/R_2		0.016	0.021	0.025	—
Transition frequency	f_T	$V_{CB} = 10\ \text{V}, I_E = -50\ \text{mA}, f = 200\ \text{MHz}$		200		MHz

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

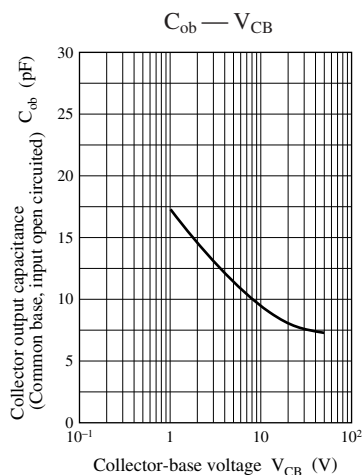
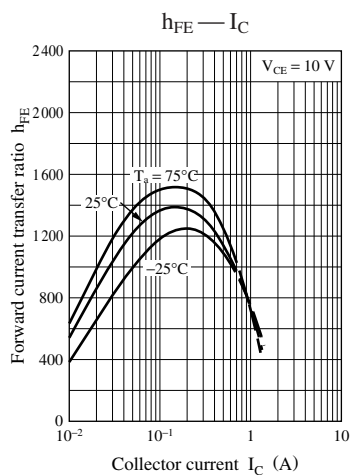
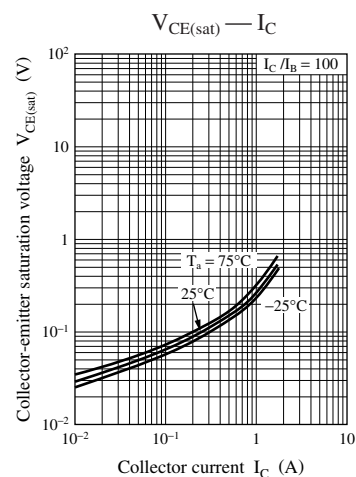
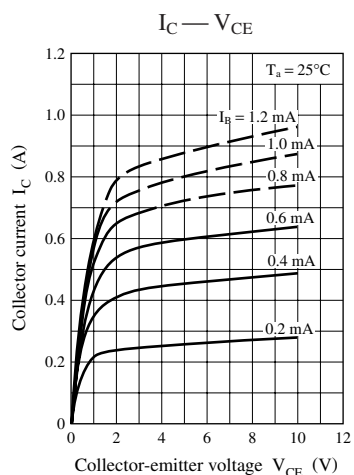
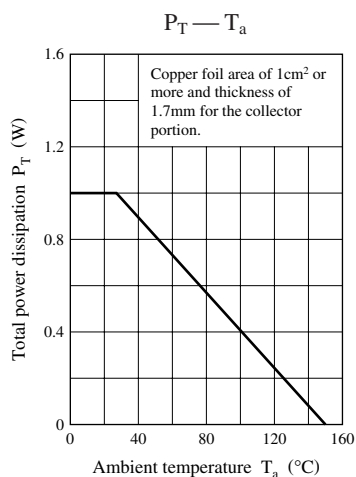
2. *: Pulse measurement



Internal Connection



Note) The part numbers in the parenthesis show conventional part number.



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