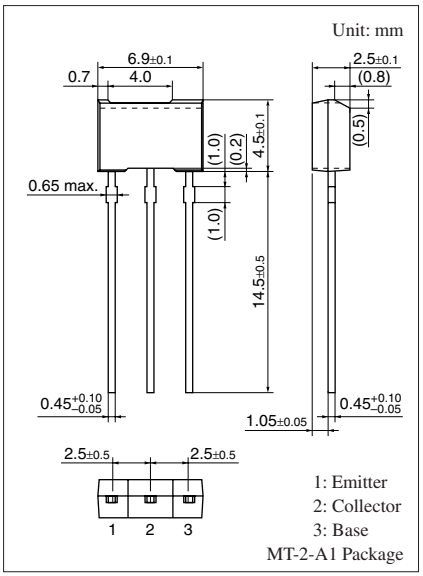
UNR8231/8231A (UN8231/8231A)

Silicon NPN epitaxial planar type

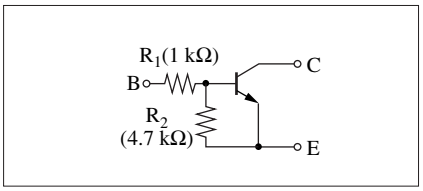
For switching



■ 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 taping

Internal Connection



■ Absolute Maximum Ratings $T_a = 25°C$

Parameter		Symbol	Rating	Unit
Collector-base voltage	UNR8231	V_{CBO}	20	V
(Emitter open)	UNR8231A		60	
Collector-emitter	UNR8231	V_{CEO}	20	V
voltage (Base open)	UNR8231A		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	°C
Storage temperature		T_{stg}	−55 to +150	°C

Note) ∗: Printed circuit board: Copper foil area of 1 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

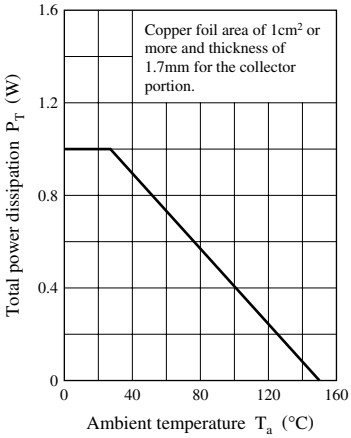
■ Electrical Characteristics $T_a = 25°C \pm 3°C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage	UNR8231	V_{CBO}	I_C = 10 µA, I_E = 0	20			V
(Emitter open)	UNR8231A			60			
Collector-emitter	UNR8231	V_{CEO}	I_C = 1 mA, I_B = 0	20			V
voltage (Base open)	UNR8231A			50			
Collector-base cutoff current (Emitter open)		I_{CBO}	V_{CB} = 15 V, I_E = 0			1	µA
Collector-emitter cutoff current (Base open)		I_{CEO}	V_{CE} = 15 V, I_B = 0			10	µA
Emitter-base cutoff current (Collector open)		I_{EBO}	V_{EB} = 14 V, I_C = 0			0.5	mA
Forward current transfer ratio *		h_{FE}	V_{CE} = 10 V, I_C = 150 mA	800		2 100	—
Collector-emitter saturation voltage *		$V_{CE(sat)}$	I_C = 500 mA, I_B = 5 mA			0.4	V
Input resistance		R_1		0.7	1.0	1.3	kΩ
Resistance ratio		R_1/R_2		0.016	0.021	0.025	—
Transition frequency		f_T	V_{CB} = 10 V, I_E = −50 mA, f = 200 MHz		200		MHz

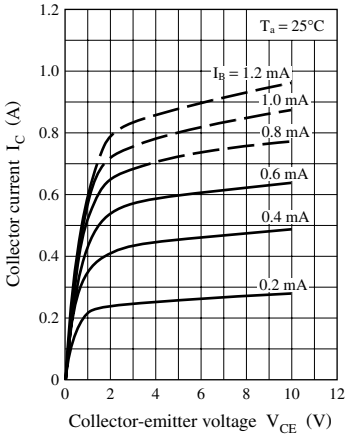
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. ∗: Pulse measurement

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

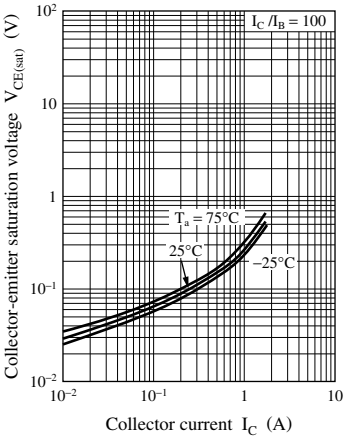
P_T — T_a



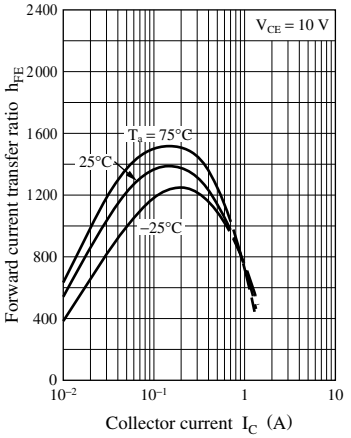
I_C — V_{CE}



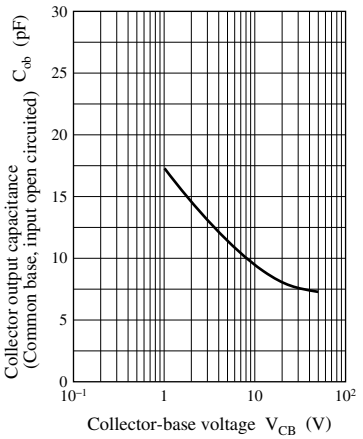
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



C_{ob} — V_{CB}



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