

# RT1N237X SERIES

〈Transistor〉

Transistor With Resistor  
For Switching Application  
Silicon NPN Epitaxial Type

## DESCRIPTION

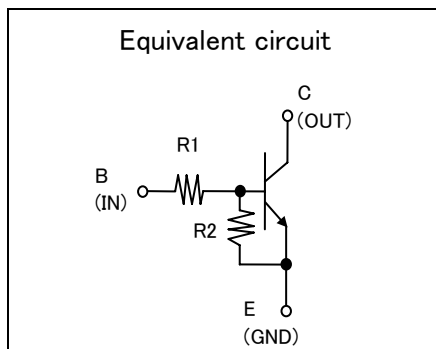
RT1N237X is a one chip transistor with built-in bias resistor, PNP type is RT1P237X.

## FEATURE

• Built-in bias resistor ( $R1=2.2k\Omega$ ,  $R2=47k\Omega$ ).

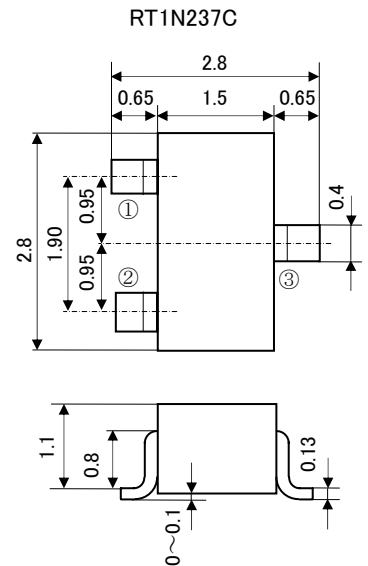
## APPLICATION

Inverted circuit, switching circuit, interface circuit, driver circuit.



## OUTLINE DRAWING

UNIT : mm



JEITA: SC-59

JEDEC: Similar to TO-236

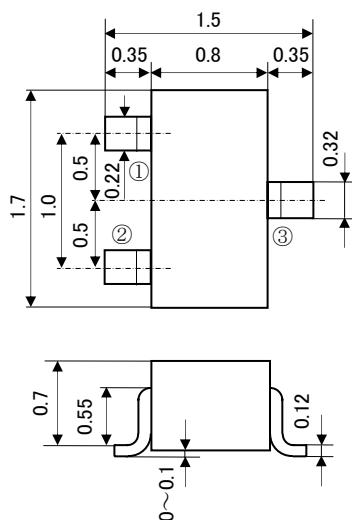
Terminal Connector

①: Base

②: Emitter

③: Collector

RT1N237U



JEITA: SC-75A

JEDEC: —

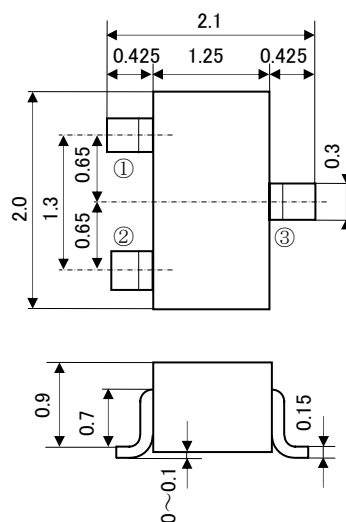
Terminal Connector

①: Base

②: Emitter

③: Collector

RT1N237M



JEITA: SC-70

JEDEC: —

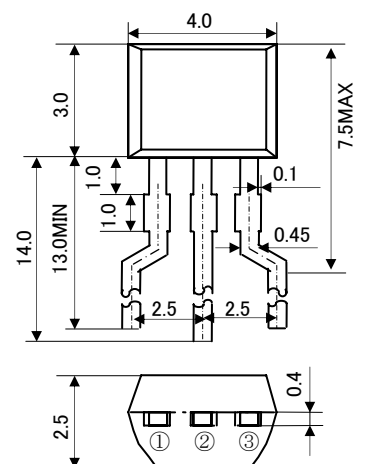
Terminal Connector

①: Base

②: Emitter

③: Collector

RT1N237S



JEITA: —

JEDEC: —

Terminal Connector

①: Emitter

②: Collector

③: Base

# RT1N237X SERIES

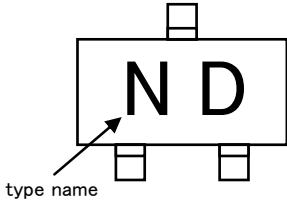
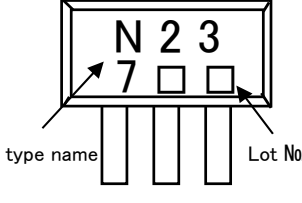
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## MARKING

RT1N237C RT1N237M RT1N237U	RT1N237S
	

## MAXIMUM RATING (Ta=25°C)

SYMBOL	PARAMETER	RATING				UNIT
		RT1N237U	RT1N237M	RT1N237C	RT1N237S	
V <sub>CBO</sub>	Collector to Base voltage	50				V
V <sub>EBO</sub>	Emitter to Base voltage	6				V
V <sub>CEO</sub>	Collector to Emitter voltage	50				V
V <sub>IN</sub>	Input voltage	12				V
I <sub>C</sub>	Collector current	100				mA
I <sub>CM</sub>	Peak Collector current	200				mA
P <sub>C</sub>	Collector dissipation(Ta=25°C)	150	200	450	mW	
T <sub>j</sub>	Junction temperature	+150				°C
T <sub>stg</sub>	Storage temperature	-55~+150				°C

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

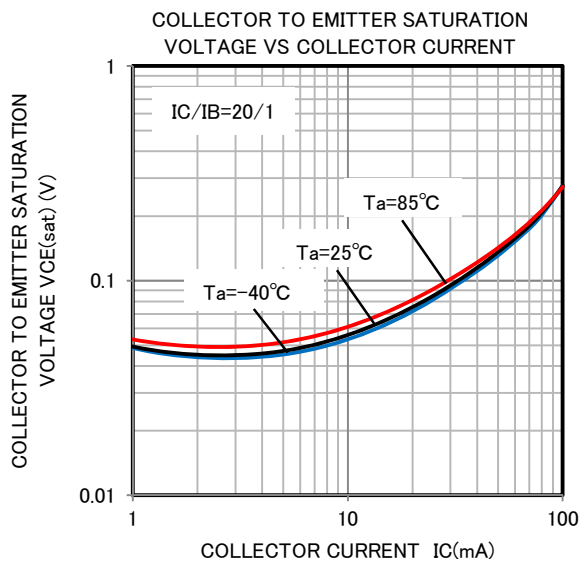
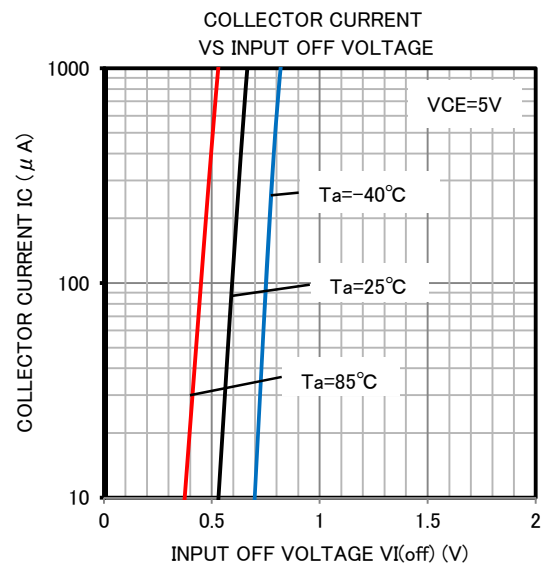
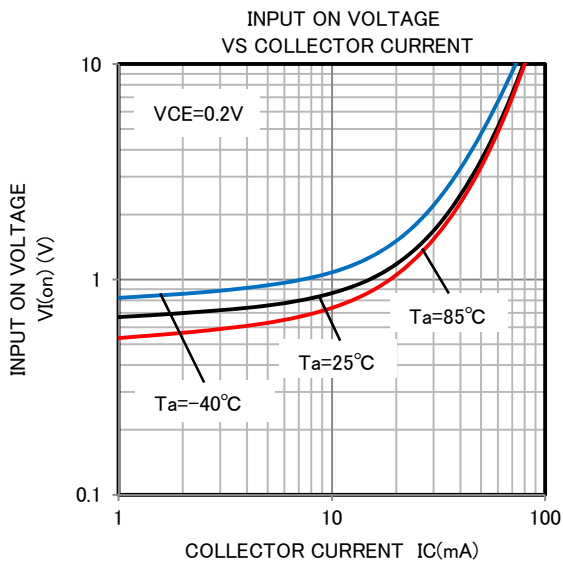
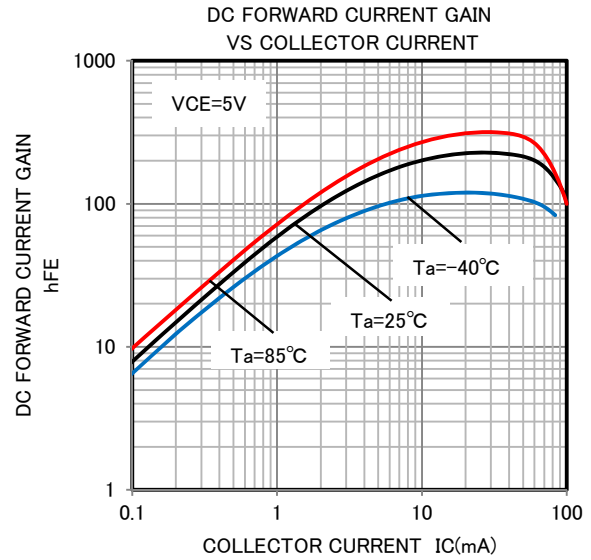
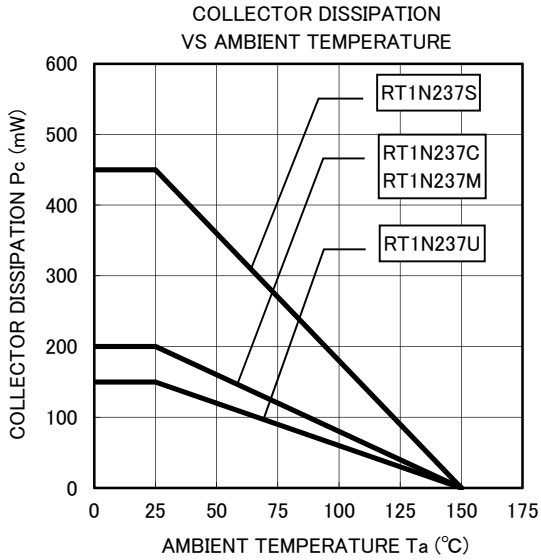
SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
V <sub>(BR)CEO</sub>	C to E breakdown voltage	I <sub>C</sub> =100 μA, R <sub>BE</sub> =∞	50	—	—	V
I <sub>CBO</sub>	Collector cut off current	V <sub>CB</sub> =50V, I <sub>E</sub> =0	—	—	0.1	μA
I <sub>EBO</sub>	Emitter cut off current	V <sub>EB</sub> =5V, I <sub>C</sub> =0	76	102	147	μA
h <sub>FE</sub>	DC forward current gain	V <sub>CE</sub> =5V, I <sub>C</sub> =10mA	80	—	—	—
V <sub>CE(sat)</sub>	C to E saturation voltage	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA	—	—	0.3	V
V <sub>I(ON)</sub>	Input on voltage	V <sub>CE</sub> =0.2V, I <sub>C</sub> =5mA	—	0.7	1.1	V
V <sub>I(OFF)</sub>	Input off voltage	V <sub>CE</sub> =5V, I <sub>C</sub> =100 μA	0.5	0.6	—	V
R <sub>1</sub>	Input resistor	—	1.5	2.2	2.9	kΩ
R <sub>2</sub> /R <sub>1</sub>	Resistor ratio	—	17	22	26	—
f <sub>T</sub>	Gain band width product	V <sub>CE</sub> =6V, I <sub>E</sub> =-10mA	—	200	—	MHz

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## TYPICAL CHARACTERISTICS





**Keep safety first in your circuit designs!**

·ISAHAYA Electronics Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage. Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (1) placement of substitutive, auxiliary, (2) use of non-flammable material or (3) prevention against any malfunction or mishap.

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