

# RT1N431X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

## DESCRIPTION

RT1N431X is a one chip transistor with built-in bias resistor, PNP type is RT1P431X.

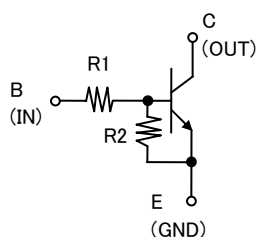
## FEATURE

www.DataSheet4U • Built-in bias resistor ( $R1=4.7k\Omega$ ,  $R2=4.7k\Omega$ ).

## APPLICATION

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

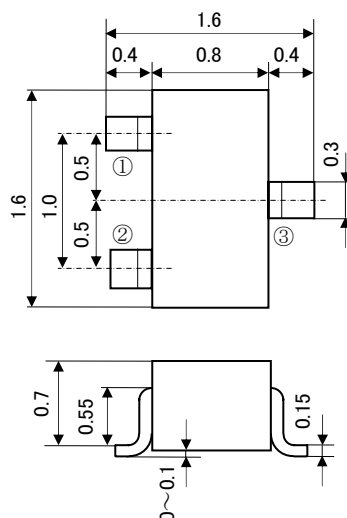
Equivalent circuit



## OUTLINE DRAWING

UNIT : mm

RT1N431U



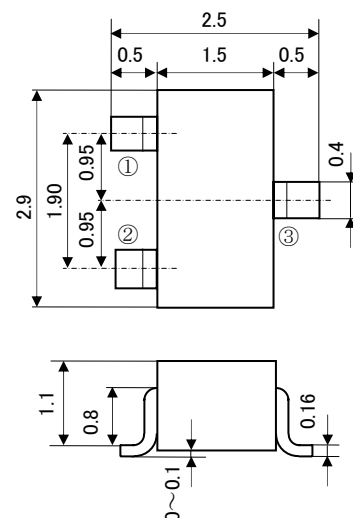
JEITA: —

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N431C



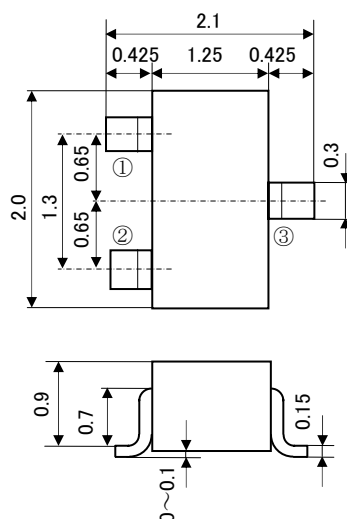
JEITA: SC-59

JEDEC: Similar to TO-236

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N431M



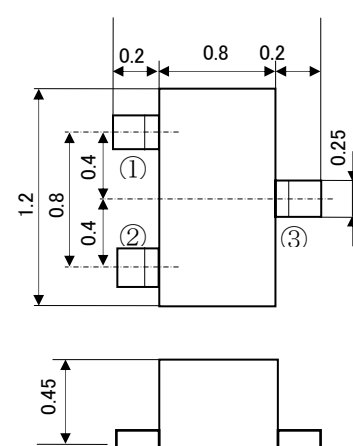
JEITA: SC-70

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N431T



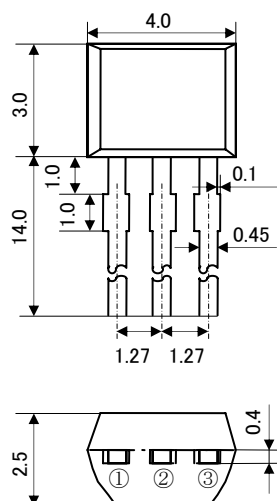
JEITA: —

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N431S



JEITA: —

JEDEC: —

Terminal Connector

- ①: Emitter
- ②: Collector
- ③: Base

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## MAXIMUM RATING (Ta=25°C)

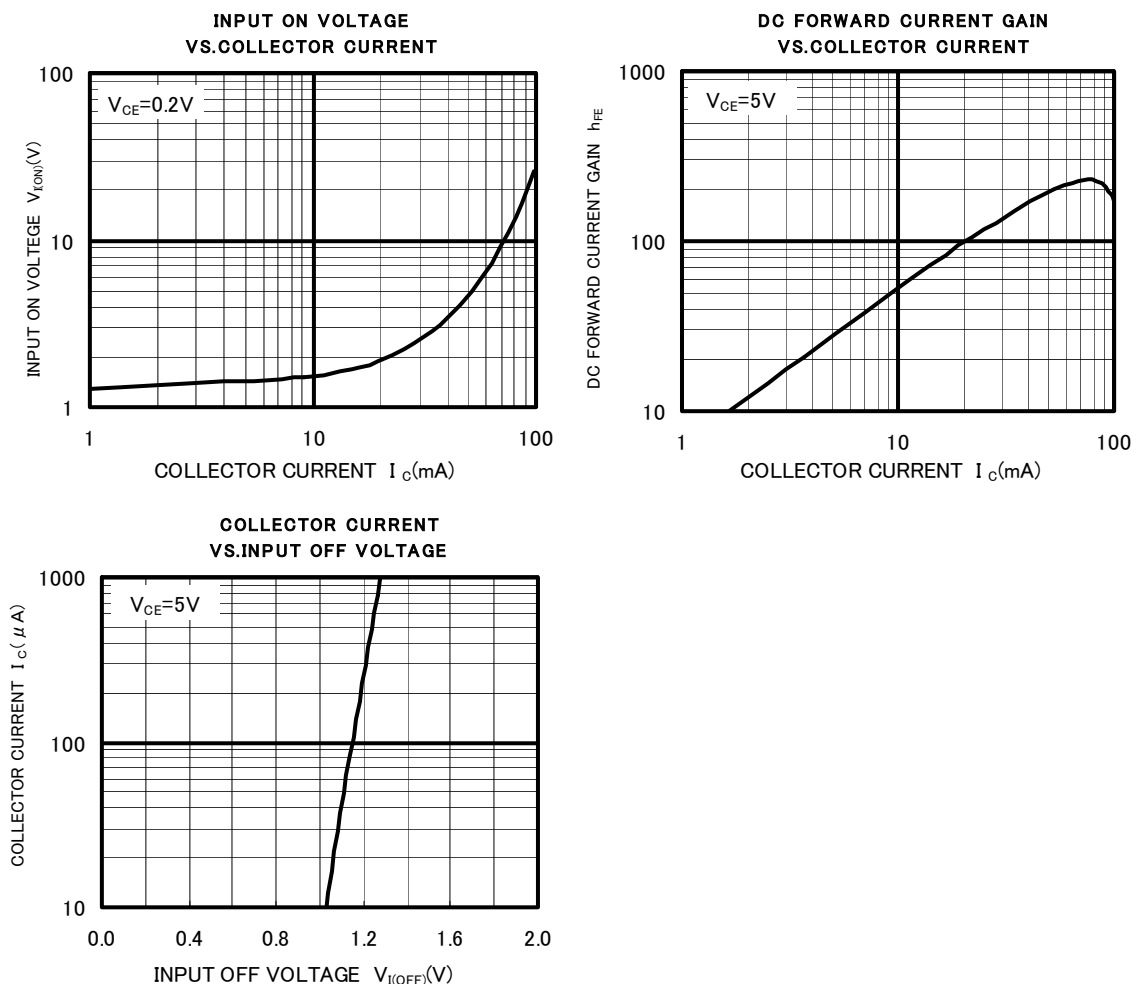
SYMBOL	PARAMETER	RATING					UNIT
		RT1N431T	RT1N431U	RT1N431M	RT1N431C	RT1N431S	
$V_{CBO}$	Collector to Base voltage	50					V
$V_{EBO}$	Emitter to Base voltage	10					V
$V_{CEO}$	Collector to Emitter voltage	50					V
$I_C$	Collector current	100					mA
$I_{CM}$	Peak Collector current	200					mA
$P_C$	Collector dissipation(Ta=25°C)	125 (※)	125	150		450	mW
$T_j$	Junction temperature	+125		+150			°C
$T_{stg}$	Storage temperature	-55~+125		-55~+150			°C

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

(※) package mounted on 9mm×19mm×1mm glass-epoxy substrate.

SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E break down voltage	$I_C=100\mu A, R_{BE}=\infty$	50			V
$I_{CBO}$	Collector cut off current	$V_{CB}=50V, I_E=0$			0.1	$\mu A$
$h_{FE}$	DC forward current gain	$V_{CE}=5V, I_C=10mA$	20			—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=10mA, I_B=0.5mA$		0.1	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V, I_C=5mA$		1.4	2.3	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V, I_C=100\mu A$	0.8	1.1		V
$R_1$	Input resistance		3.3	4.7	6.1	k $\Omega$
$R_2/R_1$	Resistance ratio		0.8	1.0	1.2	
$f_T$	Gain band width product	$V_{CE}=6V, I_E=-10mA$		200		MHz

## TYPICAL CHARACTERISTICS





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