

# RT1N230X SERIES

<Transistor>

Transistor With Resistor  
For Switching Application  
Silicon NPN Epitaxial Type

## DESCRIPTION

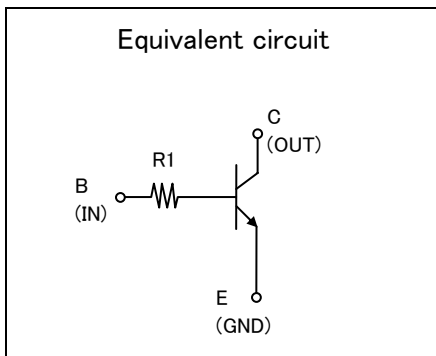
RT1N230X is a one chip transistor with built-in bias resistor, PNP type is RT1P230X.

## FEATURE

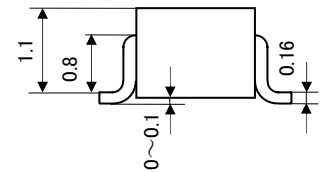
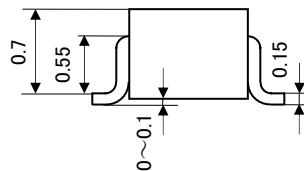
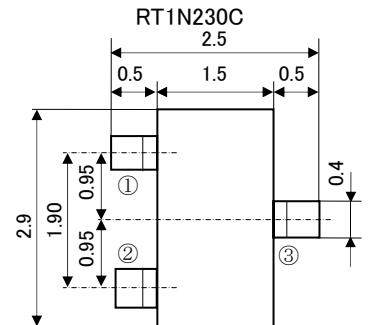
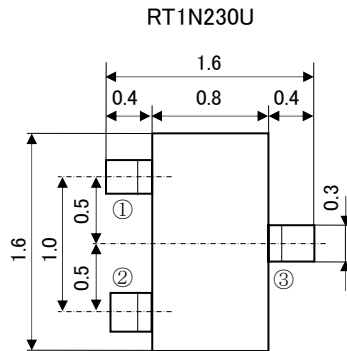
- Built-in bias resistor ( $R1=2.2k\Omega$ )

## APPLICATION

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



## OUTLINE DRAWING UNIT : mm



JEITA: —  
JEDEC: —

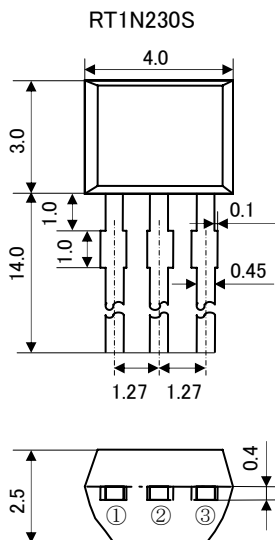
Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

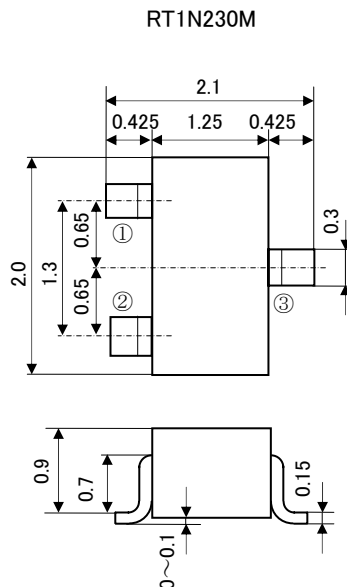
JEITA: SC-59  
JEDEC: Similar to TO-236

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector



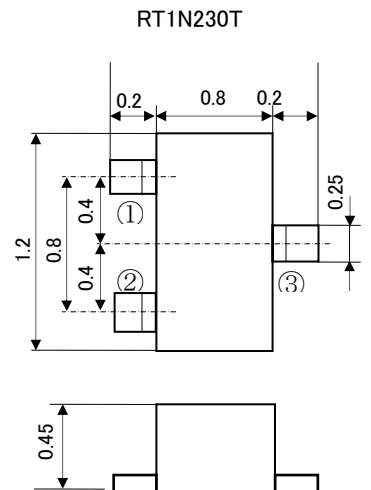
JEITA: —  
JEDEC: —  
Terminal Connector  
①: Emitter  
②: Collector  
③: Base



JEITA: SC-70  
JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector



JEITA: —  
JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

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## MAXIMUM RATING (Ta=25°C)

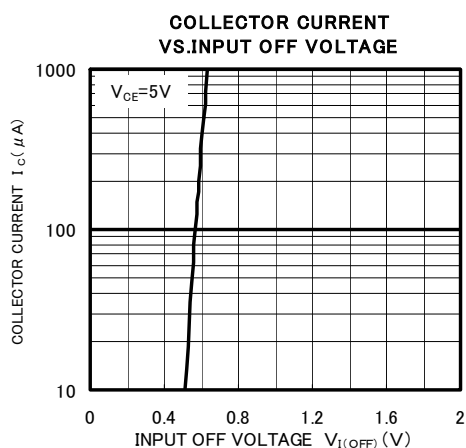
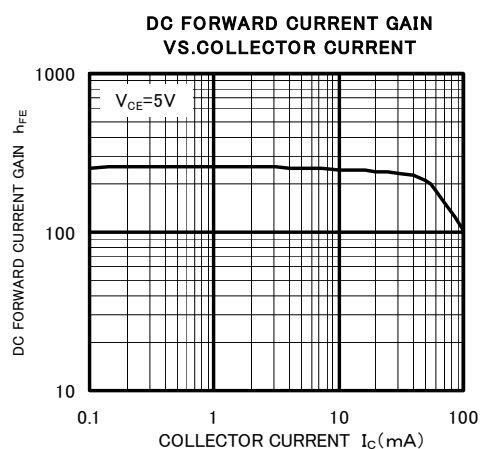
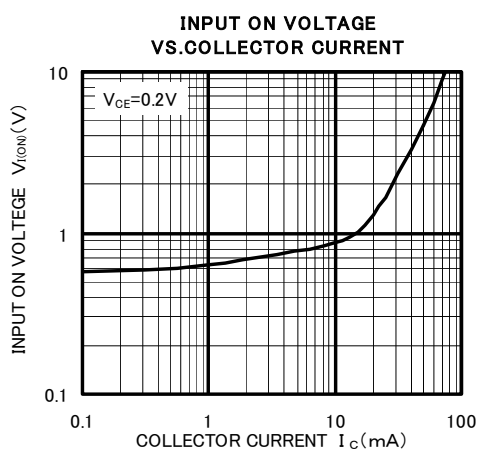
SYMBOL	PARAMETER	RATING					UNIT
		RT1N230T	RT1N230U	RT1N230M	RT1N230C	RT1N230S	
$V_{CBO}$	Collector to Base voltage	50					V
$V_{EBO}$	Emitter to Base voltage	6					V
$V_{CEO}$	Collector to Emitter voltage	50					V
$I_C$	Collector current	100					mA
$I_{CM}$	Peak Collector current	200					mA
$P_C$	Collector dissipation(Ta=25°C)	125 (※)	150	200	450	mW	
$T_j$	Junction temperature	+125	+150			°C	
$T_{stg}$	Storage temperature	-55~+125	-55~+150			°C	

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

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

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	$V_{CE}=5V, I_C=1mA$	100			—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=10mA, I_B=0.5mA$			0.3	V
$R_1$	Input resistance		1.5	2.2	2.8	k $\Omega$
$f_T$	Gain band width product	$V_{CE}=6V, I_E=-10mA$		200		MHz

## TYPICAL CHARACTERISTICS





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