

RT1N231X SERIES

Transistor

Transistor With Resistor
For Switching Application
Silicon NPN Epitaxial Type

DESCRIPTION

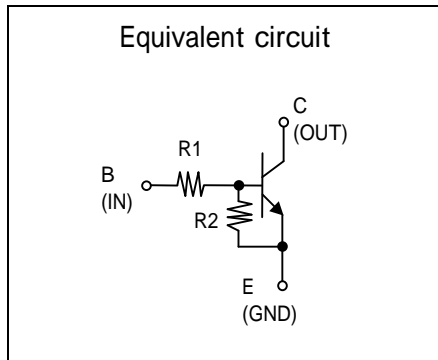
RT1N231X is a one chip transistor with built-in bias resistor, PNP type is RT1P231X.

FEATURE

- Built-in bias resistor (R1=2.2k, R2=2.2k).

APPLICATION

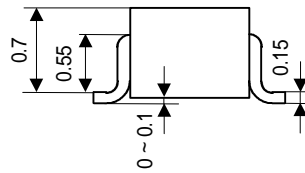
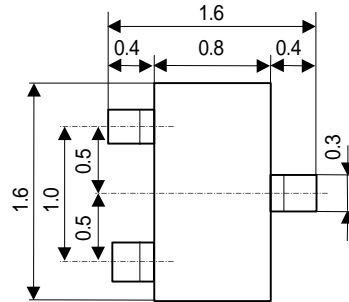
Inverted circuit, switching circuit, interface circuit, driver circuit.



OUTLINE DRAWING

UNIT : mm

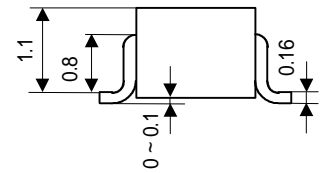
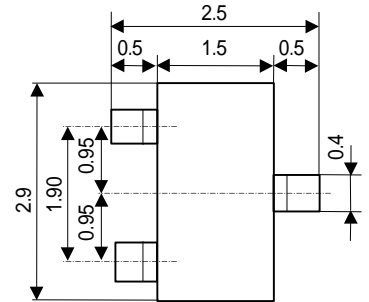
RT1N231U



JEITA: -
JEDEC: -

Terminal Connector
: Base
: Emitter
: Collector

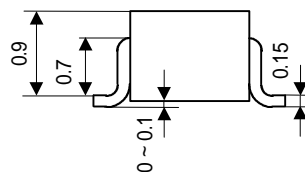
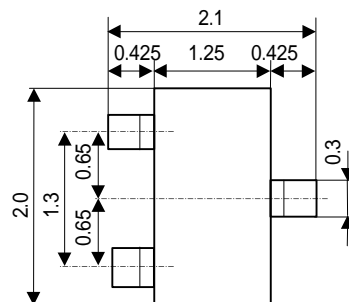
RT1N231C



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

Terminal Connector
: Base
: Emitter
: Collector

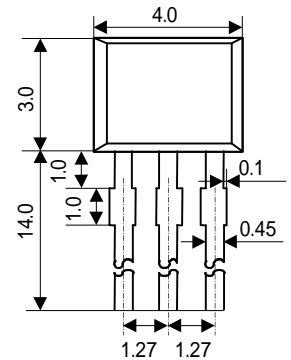
RT1N231M



JEITA: SC-70
JEDEC: -

Terminal Connector
: Base
: Emitter
: Collector

RT1N231S



JEITA: -
JEDEC: -

Terminal Connector
: Emitter
: Collector
: Base

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Transistor

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Silicon NPN Epitaxial Type

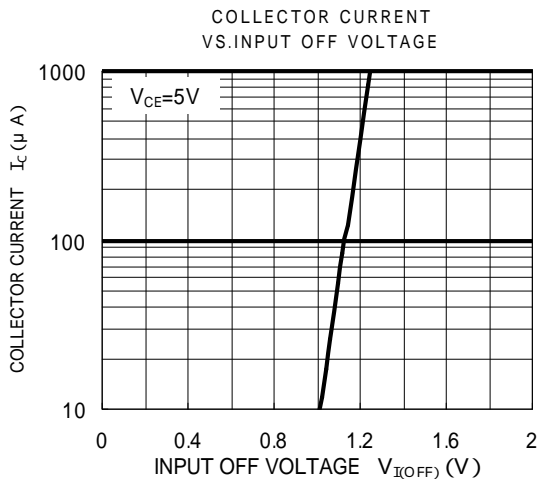
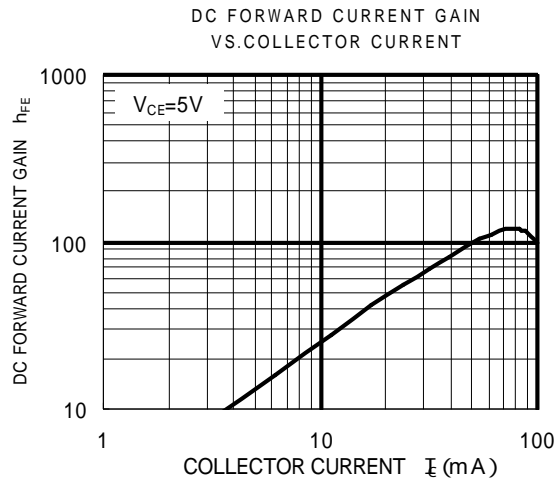
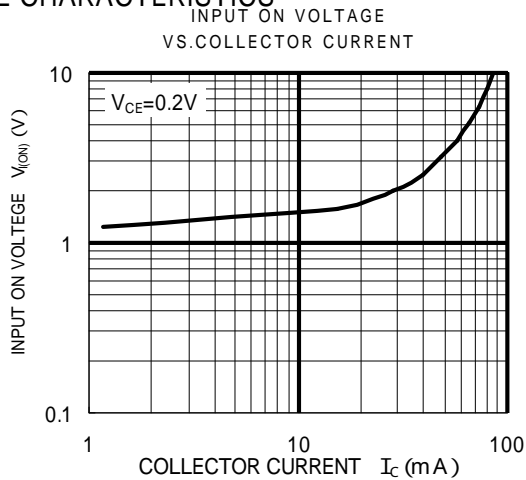
MAXIMUM RATING (Ta=25)

SYMBOL	PARAMETER	RATING				UNIT
		RT1N231U	RT1N231M	RT1N231C	RT1N231S	
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)	150	200	450	mW	
T_j	Junction temperature	+150	+150			
T_{stg}	Storage temperature	-55 ~ +150		-55 ~ +150		

ELECTRICAL CHARACTERISTICS (Ta=25)

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	μA
h_{FE}	DC forward current gain	$V_{CE}=5V, I_C=20mA$	20			-
$V_{CE(sat)}$	C to E saturation voltage	$I_C=10mA, I_B=0.5mA$			0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V, I_C=5mA$		1.3	2.2	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V, I_C=100 \mu A$	0.7	1.1		V
R_1	Input resistance		1.5	2.2	2.9	k
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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