

# RT5N231C

Transistor With Resistor  
For Switching Application  
Silicon NPN Epitaxial Type

## DESCRIPTION

RT5N231C is a one chip transistor with built-in bias resistor, PNP type is RT5P231C.

## FEATURE

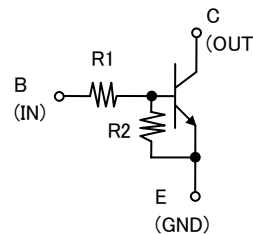
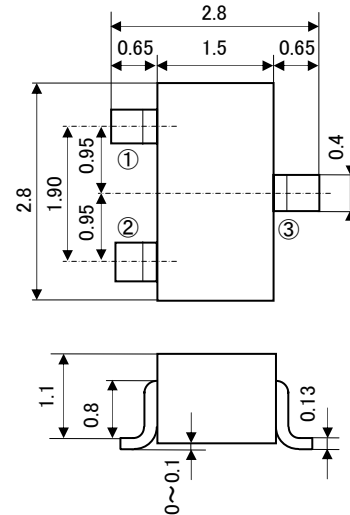
Built-in bias resistor ( $R_1=2.2k\Omega$ ,  $R_2=2.2k\Omega$ )  
High collector current ( $I_c=0.5A$ )  
Mini package for easy mounting

## 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

## MAXIMUM RATING ( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	RATING	UNIT
$V_{CBO}$	Collector to Base voltage	50	V
$V_{EBO}$	Emitter to Base voltage	10	V
$V_{IN}$	Input voltage	12	V
$V_{CEO}$	Collector to Emitter voltage	50	V
$I_C$	Collector current	500	mA
$P_C$	Collector dissipation( $T_a=25^\circ\text{C}$ )	200	mW
$T_j$	Junction temperature	+150	$^\circ\text{C}$
$T_{stg}$	Storage temperature	-55~+150	$^\circ\text{C}$

## MARKING



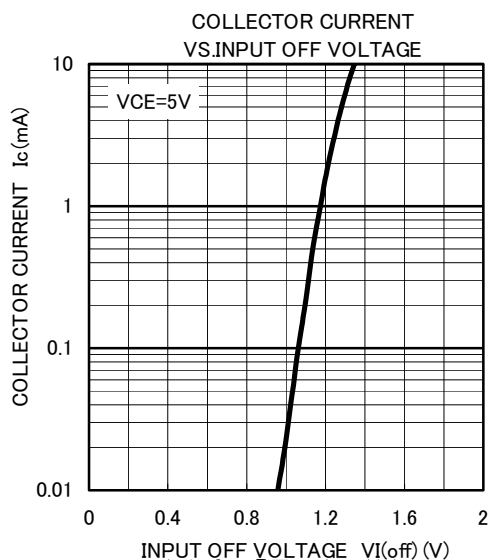
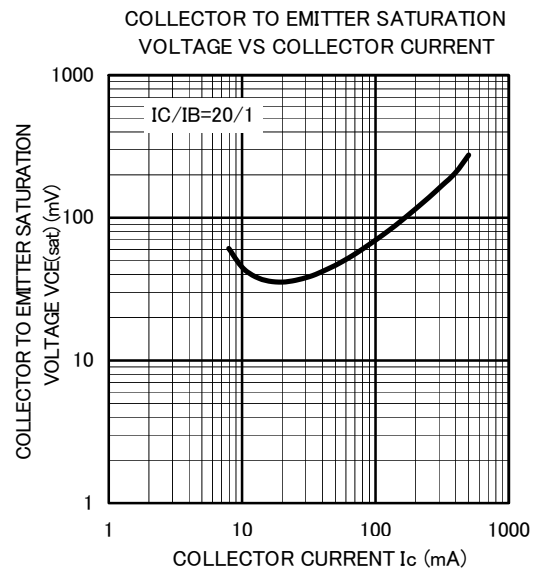
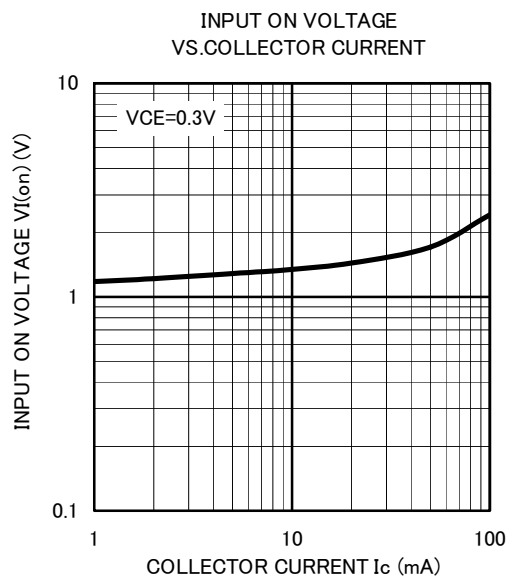
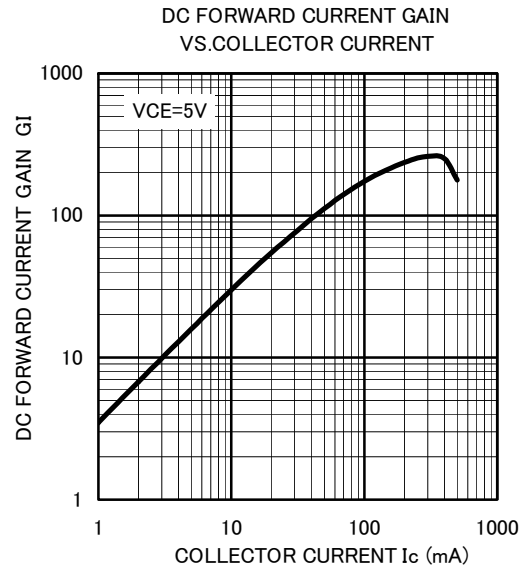
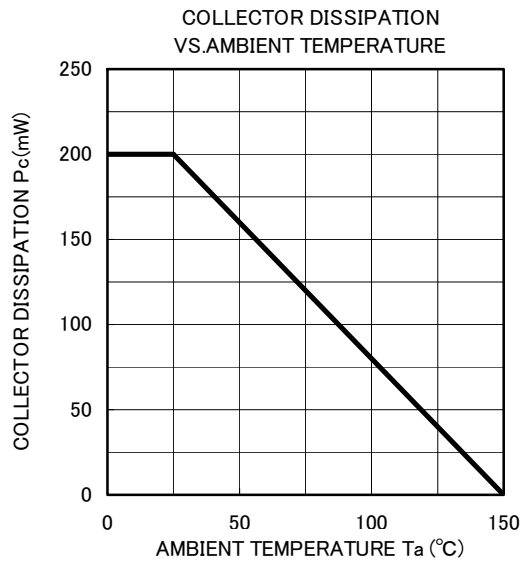
## ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{I(on)}$	Input on voltage	$V_{CE}=0.3V$ , $I_C=20mA$	—	—	3	V
$V_{I(off)}$	Input off voltage	$V_{CE}=5V$ , $I_C=100\mu A$	0.5	—	—	V
$V_{CE(sat)}$	C to E saturation voltage	$I_C=50mA$ , $I_B=2.5mA$	—	0.1	0.3	V
$I_{BE}$	B to E current	$V_{BE}=5V$	—	—	3.8	mA
$I_{CES}$	Collector cut off current	$V_{CE}=50V$ , $V_{BE}=0V$	—	—	0.5	$\mu A$
$G_1$	DC forward current gain	$V_{CE}=5V$ , $I_C=50mA$	39	—	—	—
$R_1$	Input resistor	—	1.54	2.2	2.86	$k\Omega$
$R_2/R_1$	Resistor ratio	—	0.8	1	1.2	—
$f_T$	Gain band width product	$V_{CE}=10V$ , $I_E=-5mA$ , $f=100MHz$	—	200	—	MHz

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## TYPICAL CHARACTERISTICS(T<sub>a</sub>=25°C)





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