

# RT1N144C-T150

Transistor With Resistor  
For Switching Application  
Silicon NPN Epitaxial Type

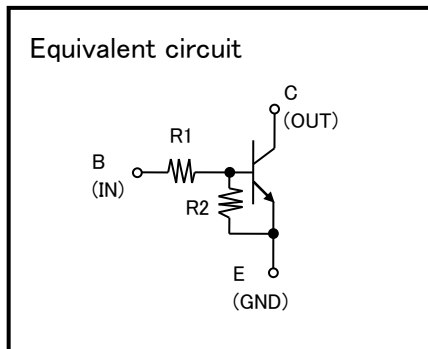
AEC-Q101 Compliance

## FEATURE

- Built-in bias resistor ( $R1=10k\Omega, R2=47k\Omega$ )
- Mini package for easy mounting

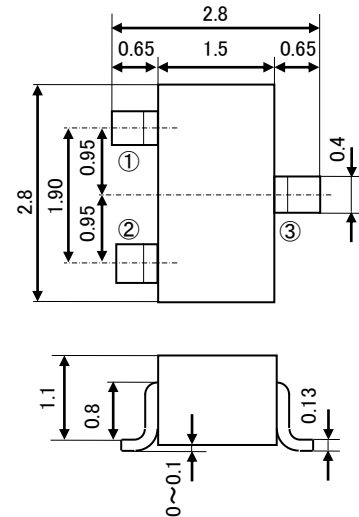
## APPLICATION

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



## OUTLINE DRAWING

UNIT : mm



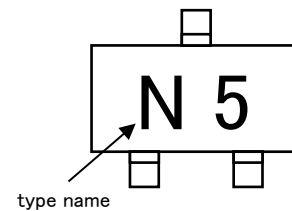
Terminal  
Connector

- ① : Base JEITA : SC-59  
② : Emitter JEDEC : Similar to TO-236  
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	6	V
$V_{CEO}$	Collector to Emitter voltage	50	V
$V_{IN}$	Input voltage	40	V
$I_C$	Collector current	100	mA
$I_{CM}$	Peak Collector current	200	mA
$P_C$	Collector dissipation	200	mW
$T_j$	Junction temperature	+150	$^\circ\text{C}$
$T_{stg}$	Storage temperature	-55~+150	$^\circ\text{C}$

## MARKING



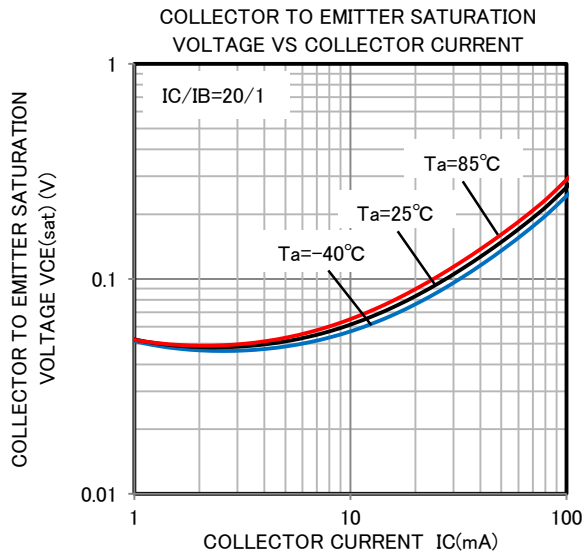
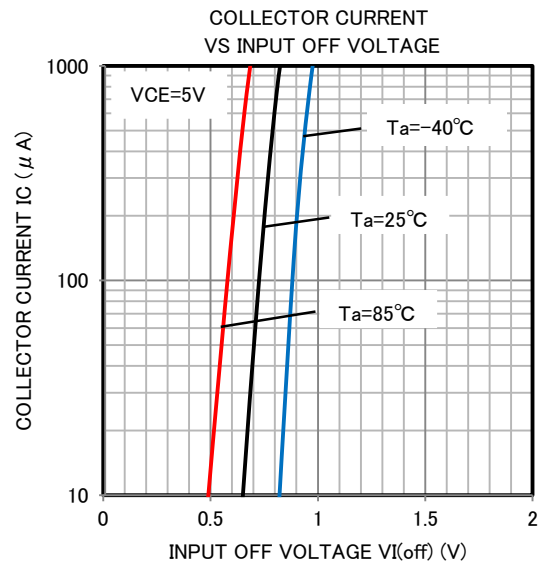
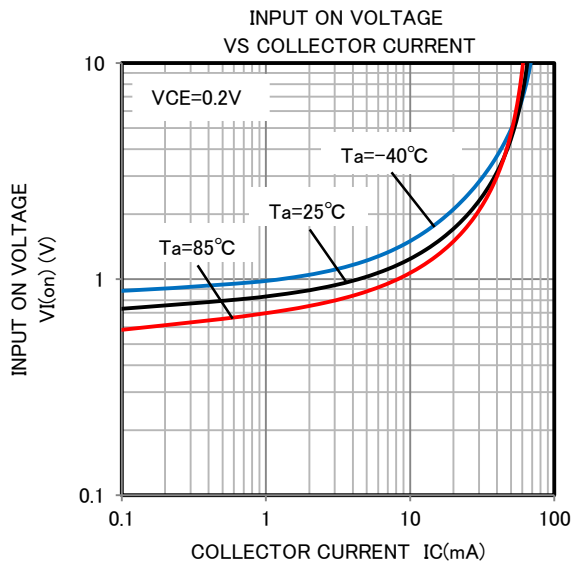
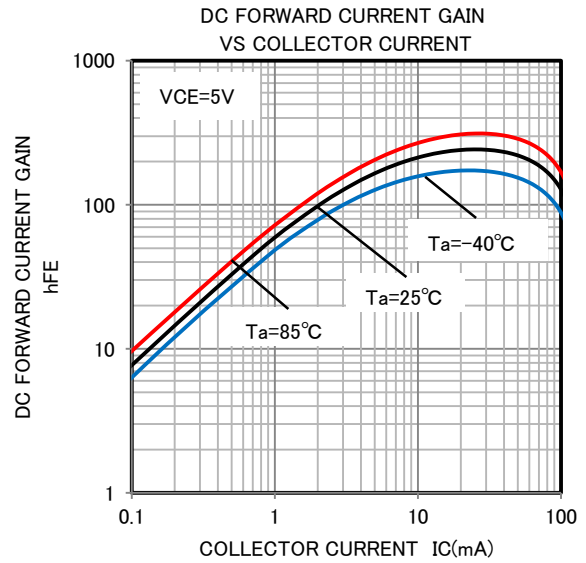
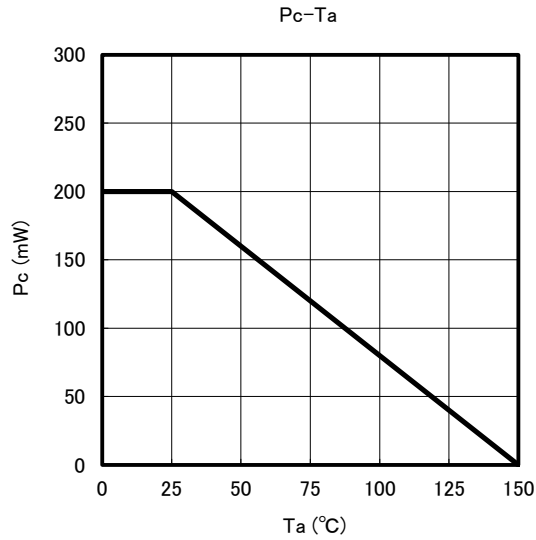
## ELECTRICAL CHARACTERISTICS ( $T_a=25^\circ\text{C}$ )

SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E breakdown voltage	$I_C=100\mu\text{A}, R_{BE}=\infty$	50	—	—	V
$I_{CBO}$	Collector cut off current	$V_{CB}=50\text{V}, I_E=0$	—	—	0.1	$\mu\text{A}$
$I_{EBO}$	Emitter cut off current	$V_{EB}=5\text{V}, I_C=0$	70	88	119	$\mu\text{A}$
$h_{FE}$	DC forward current gain	$V_{CE}=5\text{V}, I_C=5\text{mA}$	50	—	—	—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=10\text{mA}, I_B=0.5\text{mA}$	—	0.1	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2\text{V}, I_C=5\text{mA}$	—	1.0	1.8	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5\text{V}, I_C=100\mu\text{A}$	0.4	0.7	—	V
R1	Input resistor	—	7	10	13	$k\Omega$
R2/R1	Resistor ratio	—	4.2	4.7	5.1	—
$f_T$	Gain band width product	$V_{CE}=6\text{V}, I_E=-10\text{mA}$	—	200	—	MHz

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## TYPICAL CHARACTERISTICS



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

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