

# PRELIMINARY

<MFT LITE>

Notice : This is not a final specification  
Some parametric are subject to change.

## RT8N011M

NPN transistor with built-in pull-up resistor

### DESCRIPTION

RT8N011M is a composite transistor composed of NPN transistor and resistor.

Expected to reduce the size of the set and greatly reduce parts and man-hours.

RT8N011M have built-in resistor, switch circuit, ideal as a logic inversion circuit.

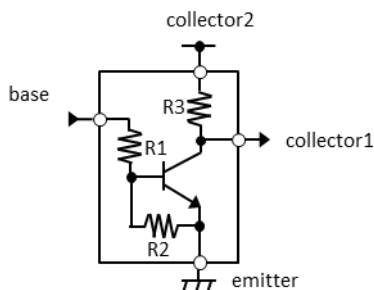
### FEATURE

- Enables downsizing of sets and high density mounting.
- Built-in bias resistor (R1=10kΩ/R2=10kΩ)
- Built-in pull-up resistor (R3=22kΩ)

### APPLICATION

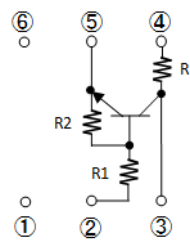
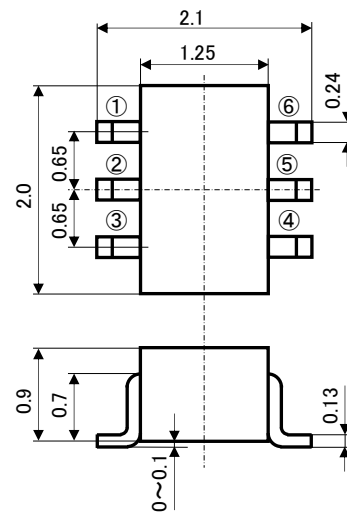
General electronics equipment.

### APPLICATION CIRCUIT



### OUTLINE DRAWING

Unit:mm



#### TERMINAL CONNECTOR

- ① : (N.C.)
- ② : BASE
- ③ : COLLECTOR1
- ④ : COLLECTOR2
- ⑤ : EMITTER
- ⑥ : (N.C.)

JEITA: SC-88  
JEDEC: -

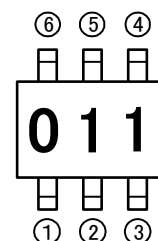
### MAXIMUM RATING (Ta=25°C)

SYMBOL	PARAMETER	RATING	UNIT
V <sub>C1B0</sub>	Collector1 to Base voltage	50	V
V <sub>C1E0</sub>	Collector1 to Emitter voltage	50	V
V <sub>EBO</sub>	Emitter to Base voltage	10	V
V <sub>IN</sub>	Input voltage	40	V
I <sub>C1</sub>	Collector1 current	50	mA
I <sub>C2</sub>	Collector2 current	10	mA
I <sub>CM</sub>	Peak Collector1 current	100	mA
P <sub>C</sub>	Total dissipation ※ 1	200	mW
T <sub>j</sub>	Junction temperature	+150	°C
T <sub>stg</sub>	Storage temperature	-55~+150	°C

※1: mounted on glass-epoxy substrate(54mm×9mm×1mm)

Operating temperature range: Within T<sub>stg</sub> temperature range and within T<sub>jmax</sub> range.

### MARKING



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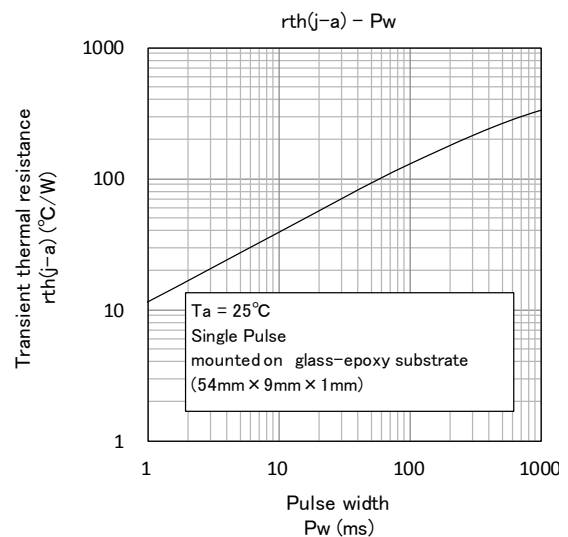
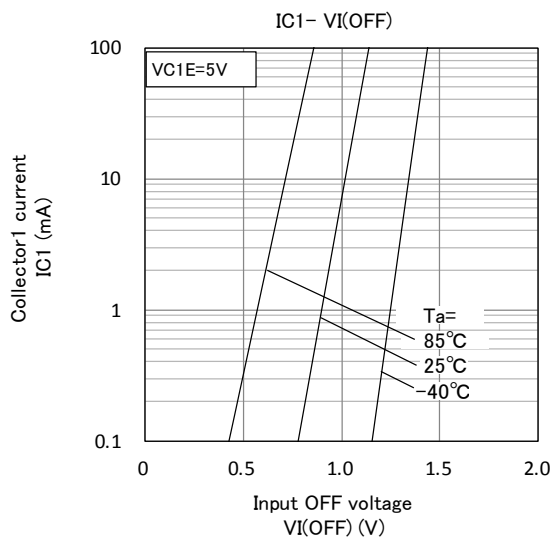
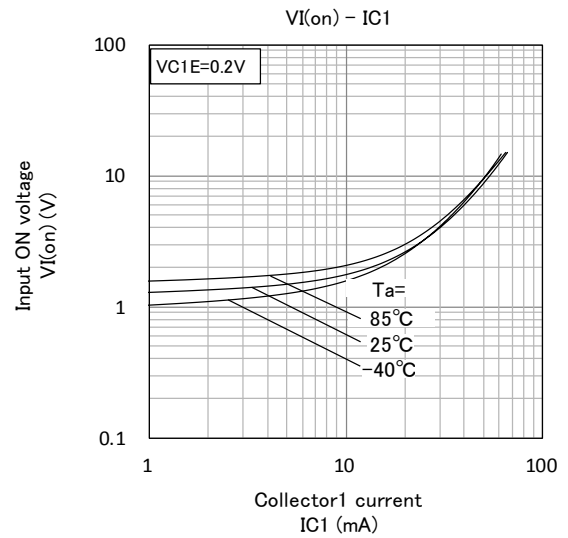
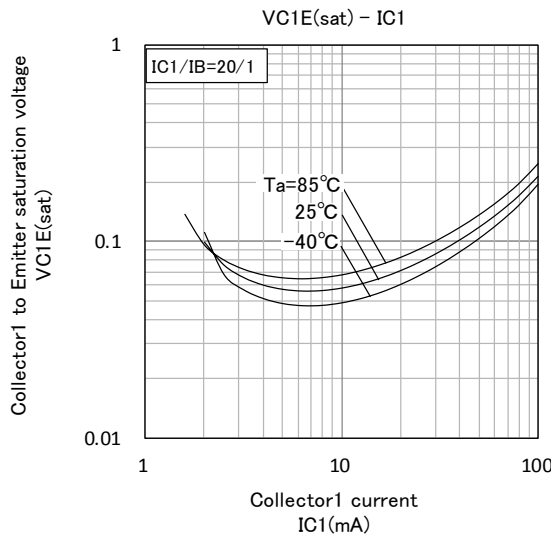
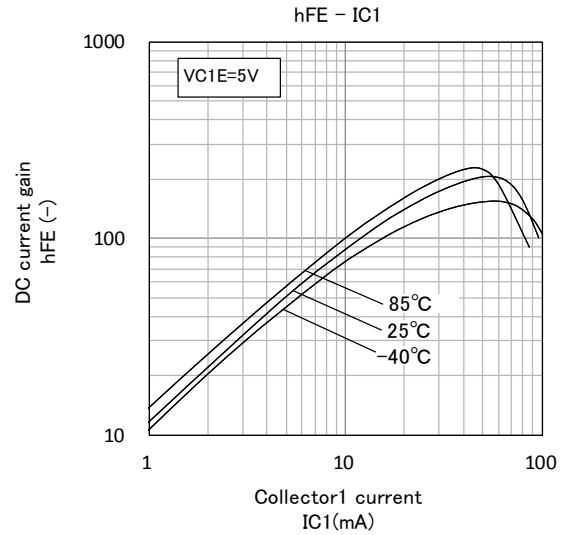
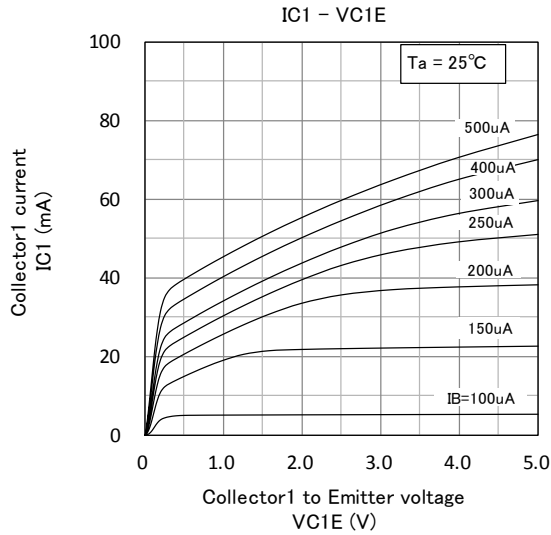
NPN transistor with built-in pull-up resistor

### ELECTRICAL CHARACTERISTICS (Ta=25°C)

SYMBOL	PARAMETER	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
$V_{BR(C1EO)}$	Collector1 to Emitter Breakdown voltage	$I_{C1}=100\ \mu\text{A}$ , $R_{BE}=\infty$	50	-	-	V
$h_{FE}$	DC forward current gain	$V_{C1E}=5\text{V}$ , $I_{C1}=10\text{mA}$	50	-	-	-
$I_{C1BO}$	Collector1 cut off current	$V_{C1B}=50\text{V}$ , $I_E=0\text{A}$	-	-	0.1	$\mu\text{A}$
$I_{EBO}$	Emitter cut off current	$V_{EB}=5\text{V}$ , $I_{C1}=0\text{A}$	193	-	357	$\mu\text{A}$
$V_{C1E(sat)}$	Collector1 to Emitter saturation voltage	$I_{C1}=10\text{mA}$ , $I_B=0.5\text{mA}$	-	100	-	mV
$V_{I(ON)}$	Input on voltage	$V_{C1E}=0.2\text{V}$ , $I_{C1}=5\text{mA}$	-	1.5	-	V
$V_{I(OFF)}$	Input off voltage	$V_{C1E}=5\text{V}$ , $I_{C1}=0.1\text{mA}$	-	1.1	-	V
$f_T$	Gain band width product	$V_{C1E}=6\text{V}$ , $I_E=-10\text{mA}$	-	200	-	MHz
$R_1$	Input Base resistor		-	10	-	k $\Omega$
$R_2$	Base to Emitter resistor		-	10	-	k $\Omega$
$R_3$	Collector2 resistor		-	22	-	k $\Omega$
$R_2/R_1$	Resistor ratio		0.9	1.0	1.1	-

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TYPICAL CHARACTERISTICS



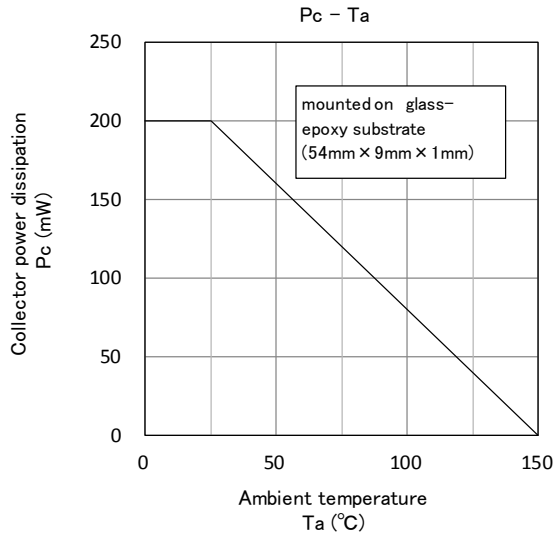
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