

**RT2N09M**

COMPOSITE TRANSISTOR WITH RESISTOR  
FOR SWITCHING APPLICATION  
SILICON NPN EPITAXIAL TYPE

**DESCRIPTION**

RT2N09M is a composite transistor with built-in bias resistor

**FEATURE**

Built-in bias resistor ( R1=2.2 K , R2=47K )

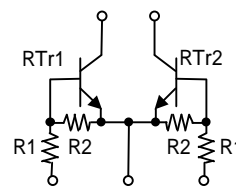
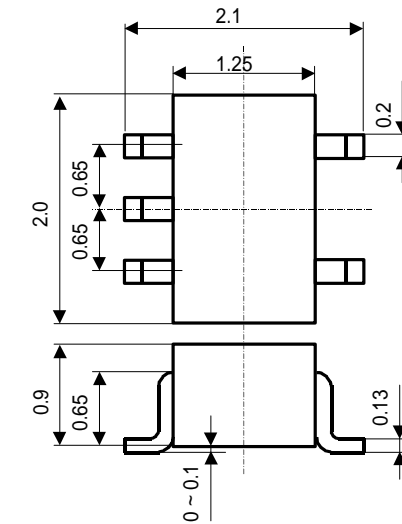
Mini package for easy mounting

**APPLICATION**

Inverted circuit , switching circuit , interface circuit , driver circuit

**OUTLINE DRAWING**

Unit:mm

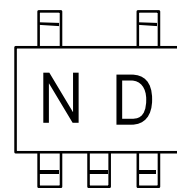
**TERMINAL CONNECTOR**

: BASE 1  
: EMITTER (COMMON)  
: BASE 2  
: COLLECTOR 2  
: COLLECTOR 1

JEITA: -  
JEDEC: -

**MAXIMUM RATINGS** (Ta=25 °C)(RTr1, RTr2)

Symbol	Parameter	Ratings	Unit
V <sub>CBO</sub>	Collector to Base voltage	50	V
V <sub>EBO</sub>	Emitter to Base voltage	6	V
V <sub>CEO</sub>	Collector to Emitter voltage	50	V
I <sub>C</sub>	Collector current	100	mA
I <sub>CM</sub>	Peak Collector current	200	mA
P <sub>C</sub>	Collector dissipation (Total Ta=25 °C)	150	mW
T <sub>j</sub>	Junction temperature	+ 150	
T <sub>stg</sub>	Storage temperature	-55 ~ + 150	

**MARKING**

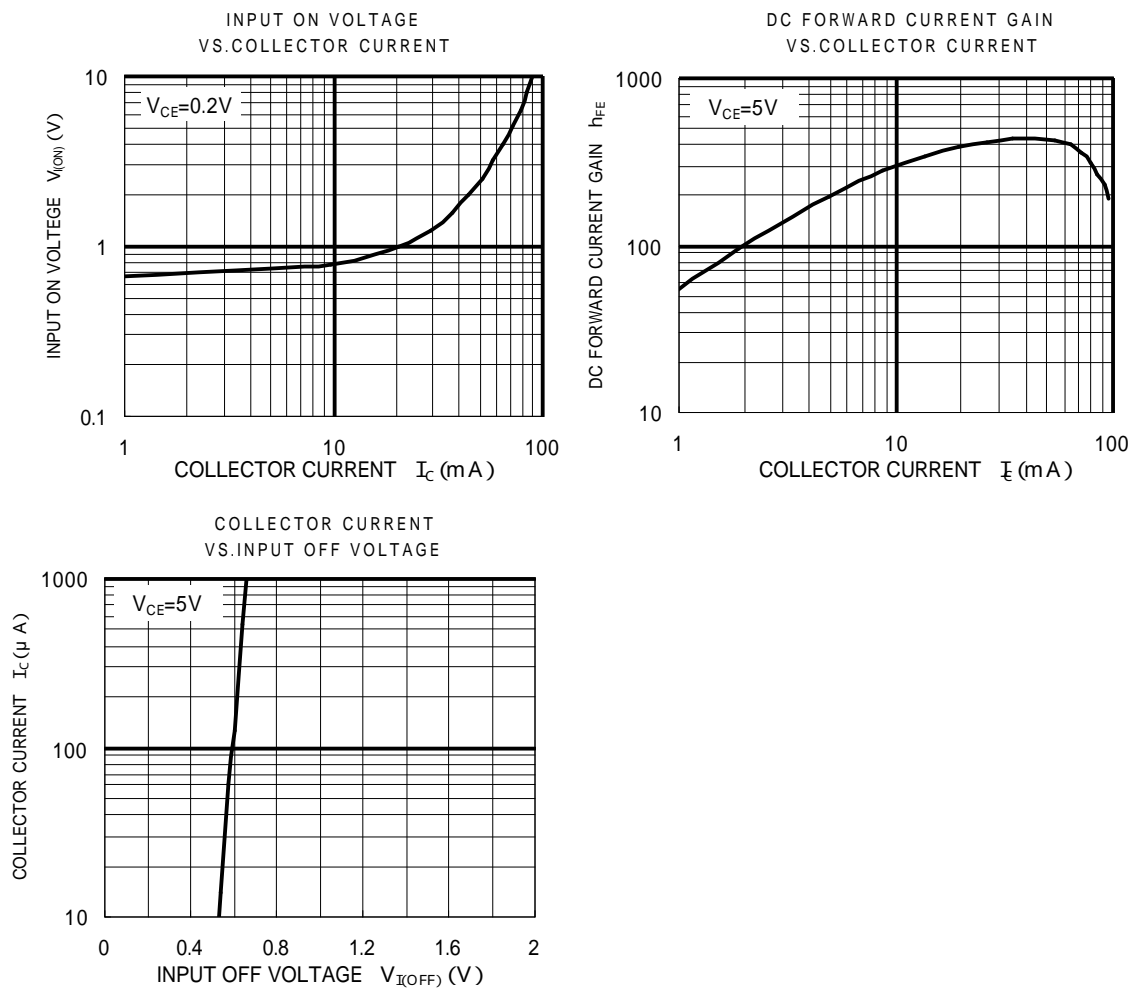
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## ELECTRICAL CHARACTERISTICS (Ta=25 °C)(RT1, RT2)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)CEO}$	Collector to Emitter break down voltage	$I_C=100 \mu A, R_{BE}=\infty$	50	-	-	V
$I_{CBO}$	Collector cut off current	$V_{CB}=50V, I_E=0mA$	-	-	0.1	$\mu A$
$h_{FE}$	DC forward current gain	$V_{CE}=5V, I_C=10mA$	80	-	-	-
$V_{CE(sat)}$	Collector to Emitter saturation voltage	$I_C=10mA, I_B=0.5mA$	-	0.1	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V, I_C=5mA$	-	0.7	1.1	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V, I_C=100 \mu A$	0.5	0.6	-	V
$R_1$	Input resistor		1.5	2.2	2.9	K
$R_2/R_1$	Resistor ratio			22		-
$f_T$	Gain band width product	$V_{CE}=6V, I_E=-10mA$	-	200	-	MHz

## TYPICAL CHARACTERISTICS (Tr1, Tr2)





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

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