

# RT1N144X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

## DESCRIPTION

RT1N144X is a one chip transistor with built-in bias resistor, PNP type is RT1P144X.

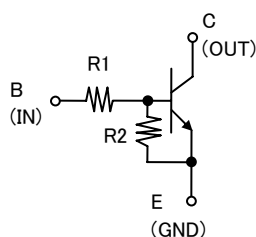
## FEATURE

- Built-in bias resistor ( $R1=10k\Omega$ ,  $R2=47k\Omega$ ).

## APPLICATION

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

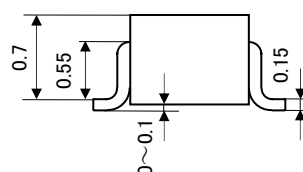
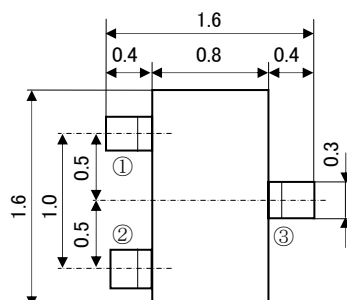
Equivalent circuit



## OUTLINE DRAWING

UNIT : mm

RT1N144U



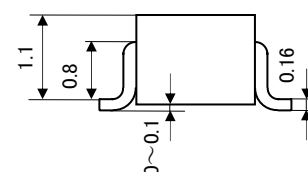
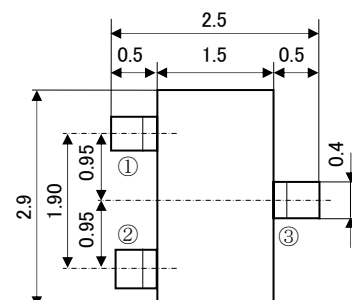
JEITA: —

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N144C



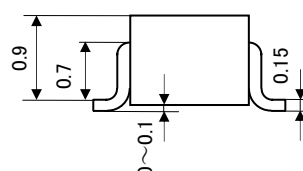
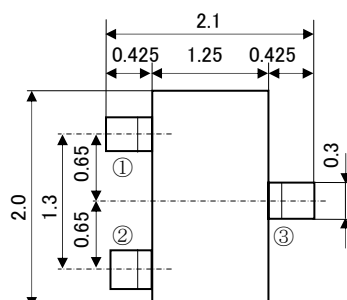
JEITA: SC-59

JEDEC: Similar to TO-236

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N144M



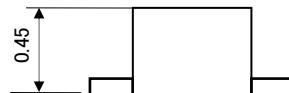
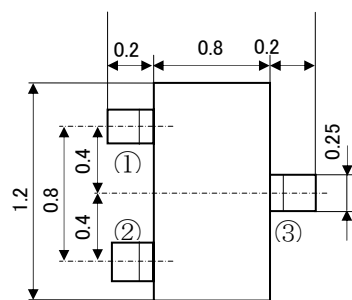
JEITA: SC-70

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N144T



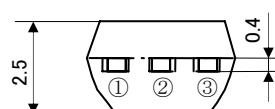
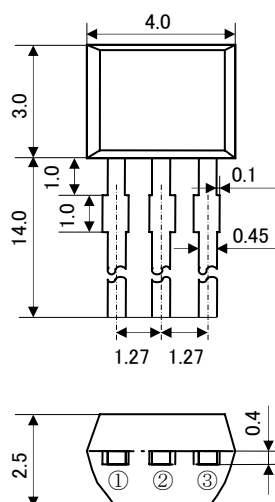
JEITA: —, JEDEC: —

ISAHAYA: T-USM

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N144S



JEITA: —

JEDEC: —

Terminal Connector

- ①: Emitter
- ②: Collector
- ③: Base

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〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

## MAXIMUM RATING (Ta=25°C)

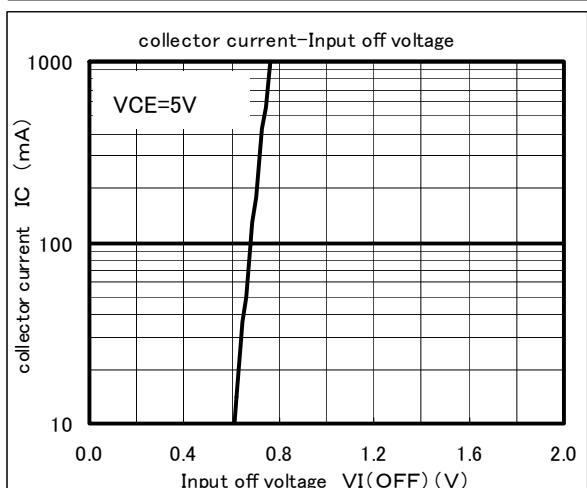
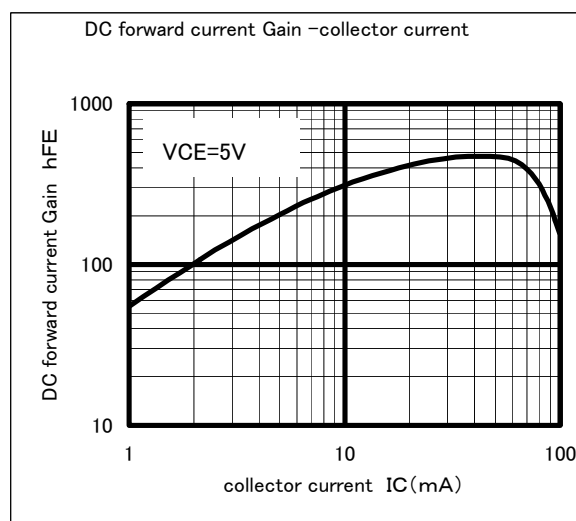
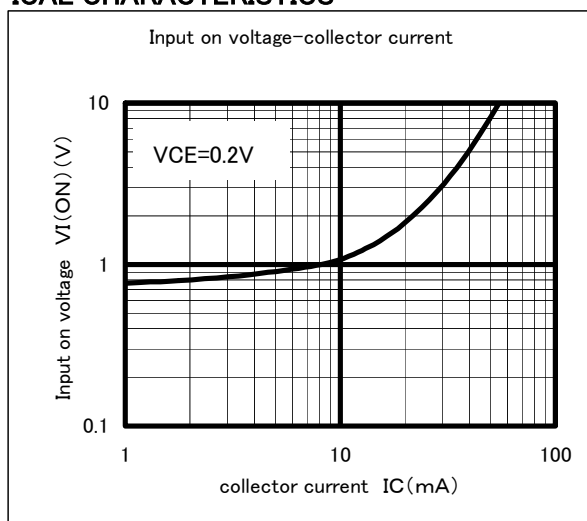
SYMBOL	PARAMETER	RATING					UNIT
		RT1N144T	RT1N144U	RT1N144M	RT1N144C	RT1N144S	
$V_{CBO}$	Collector to Base voltage	50					V
$V_{EBO}$	Emitter to Base voltage	6					V
$V_{CEO}$	Collector to Emitter voltage	50					V
$I_C$	Collector current	100					mA
$I_{CM}$	Peak Collector current	200					mA
$P_C$	Collector dissipation(Ta=25°C)	125(※)	150	200		450	mW
$T_j$	Junction temperature	+125	+150				°C
$T_{stg}$	Storage temperature	-55~+125	-55~+150				°C

## ELECTRICAL CHARACTERISTICS (Ta=25°C)

(※) package mounted on 9mm×19mm×1mm glass-epoxy substrate.

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	$\mu A$
$h_{FE}$	DC forward current gain	$V_{CE}=5V, I_C=5mA$	50			—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=10mA, I_B=0.5mA$		0.1	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V, I_C=5mA$		1.0	1.8	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V, I_C=100\mu A$	0.4	0.7		V
$R_1$	Input resistance		7.0	10	13	k $\Omega$
$R_2/R_1$	Resistance ratio		4.2	4.7	5.1	
$f_T$	Gain band width product	$V_{CE}=6V, I_E=-10mA$		200		MHz

## TYPICAL CHARACTERISTICS





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