

RT1N141X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

DESCRIPTION

RT1N141X is a one chip transistor with built-in bias resistor, PNP type is RT1P141X.

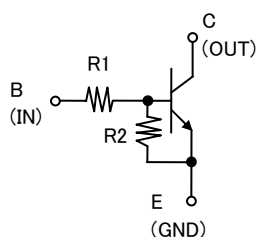
FEATURE

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

APPLICATION

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

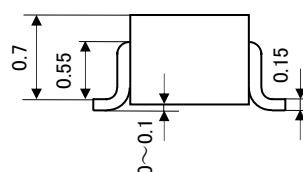
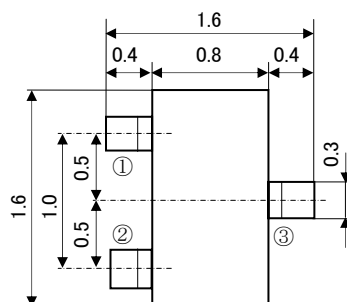
Equivalent circuit



OUTLINE DRAWING

UNIT : mm

RT1N141U



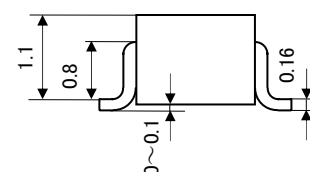
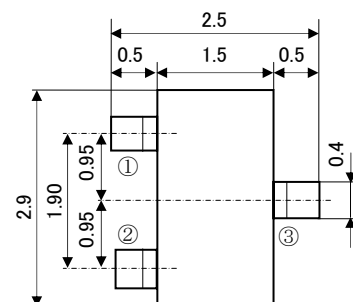
JEITA: —

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N141C



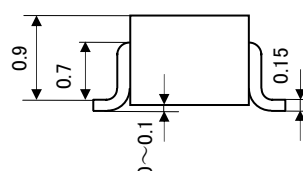
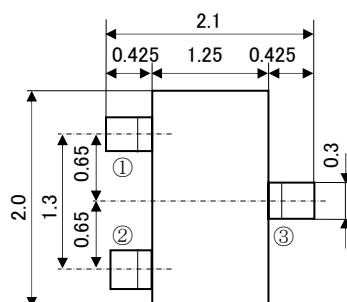
JEITA: SC-59

JEDEC: Similar to TO-236

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N141M



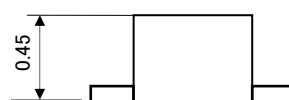
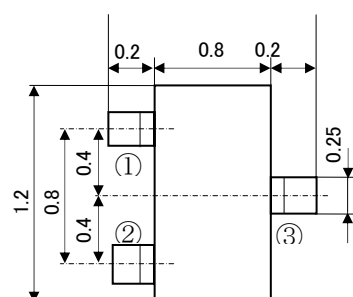
JEITA: SC-70

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N141T



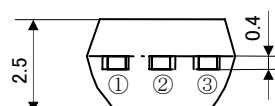
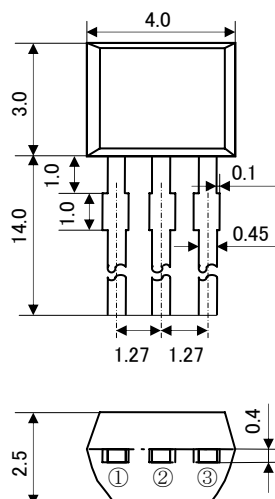
JEITA: —

JEDEC: —

Terminal Connector

- ①: Base
- ②: Emitter
- ③: Collector

RT1N141S



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
		RT1N141T	RT1N141U	RT1N141M	RT1N141C	RT1N141S	
V_{CBO}	Collector to Base voltage	50					V
V_{EBO}	Emitter to Base voltage	10					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(※)	125	150		450	mW
T_j	Junction temperature	+125		+150			°C
T_{stg}	Storage temperature	-55~+125		-55~+150			°C

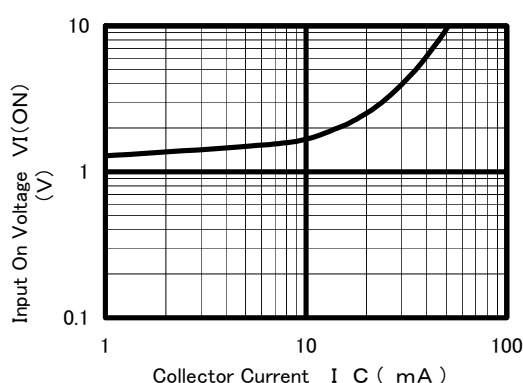
(※) package mounted on 9mm × 19mm × 1mm glass-epoxy substrate.

ELECTRICAL CHARACTERISTICS (Ta=25°C)

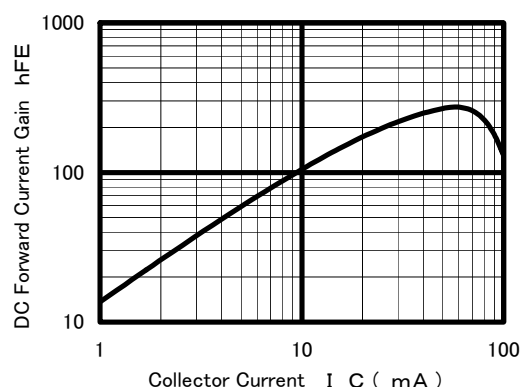
SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E break down voltage	$I_C=100\mu A, R_{BE}=\infty$	50			V
I_{CBO}	Collector cut off current	$V_{CB}=50V, I_E=0$			0.1	μA
h_{FE}	DC forward current gain	$V_{CE}=5V, I_C=10mA$	50			—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=10mA, I_B=0.5mA$		0.1	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V, I_C=5mA$		1.5	3.0	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V, I_C=100\mu A$	0.8	1.1		V
R_1	Input resistance		7.0	10	13	k Ω
R_2/R_1	Resistance ratio		0.9	1.0	1.1	
f_T	Gain band width product	$V_{CE}=6V, I_E=-10mA$		200		MHz

TYPICAL CHARACTERISTICS

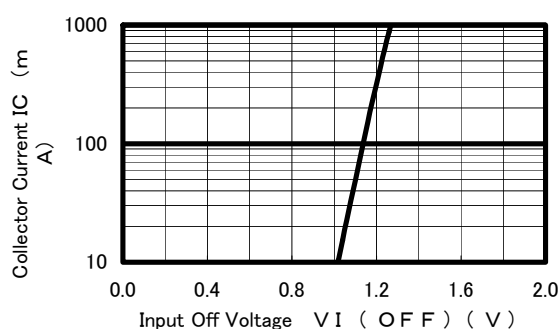
Input On Voltage – Collector Current



DC Forward Current Gain – Collector Current



Collector Current – Input Off Voltage





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