RT1N136X SERIES

〈Transistor〉

Transistor With Resistor
For Switching Application
Silicon NPN Epitaxial Type

DESCRIPTION

RT1N136X is a one chip transistor with built-in bias resistor,PNP type is RT1P136X.

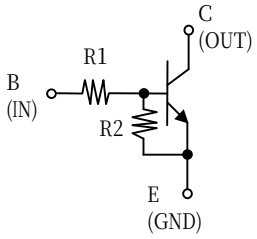
FEATURE

・Built-in bias resistor (R1=1kΩ,R2=10kΩ).

APPLICATION

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

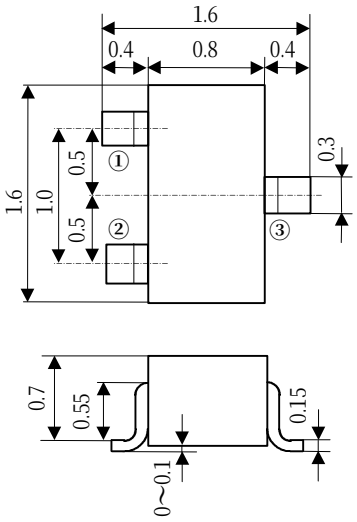
Equivalent circuit



OUTLINE DRAWING

UNIT : mm

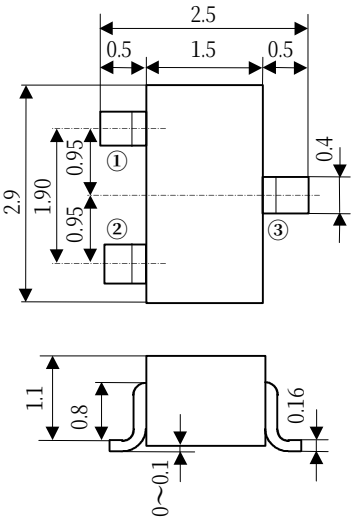
RT1N136U



JEITA : —
JEDEC : —

Terminal Connector
①: Base
②: Emitter
③: Collector

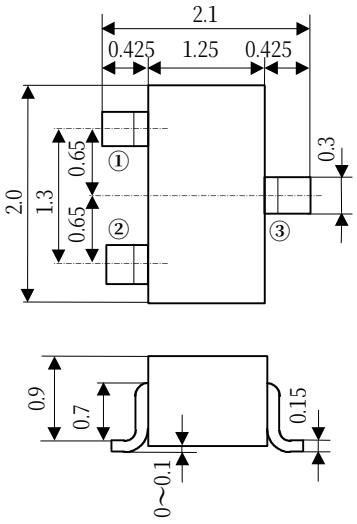
RT1N136C



JEITA : SC-59
JEDEC : Similar to TO-236

Terminal Connector
①: Base
②: Emitter
③: Collector

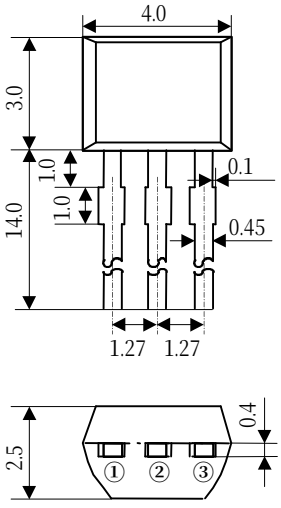
RT1N136M



JEITA : SC-70
JEDEC : —

Terminal Connector
①: Base
②: Emitter
③: Collector

RT1N136S



JEITA : —
JEDEC : —

Terminal Connector
①: Emitter
②: Collector
③: Base

RT1N136X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

MAXIMUM RATING (Ta=25°C)

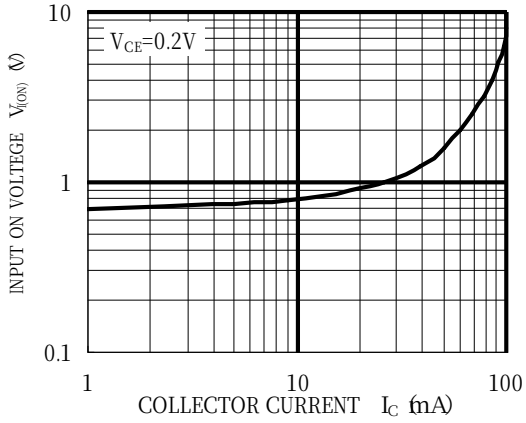
SYMBOL	PARAMETER	RATING				UNIT
		RT1N136U	RT1N136M	RT1N136C	RT1N136S	
V_{CBO}	Collector to Base voltage	50				V
V_{EBO}	Emitter to Base voltage	6				V
V_{CEO}	Collector to Emitter voltage	50				V
I_C	Collector current	100				mA
I_{CM}	Peak Collector current	200				mA
P_C	Collector dissipation(Ta=25°C)	**150**	**200**		4**50**	mW
Tj	Junction temperature	+1**50**	+1**50**			°C
Tstg	Storage temperature	-55～+**150**	-55～+**150**			°C

ELECTRICAL CHARACTERISTICS (Ta=25°C)

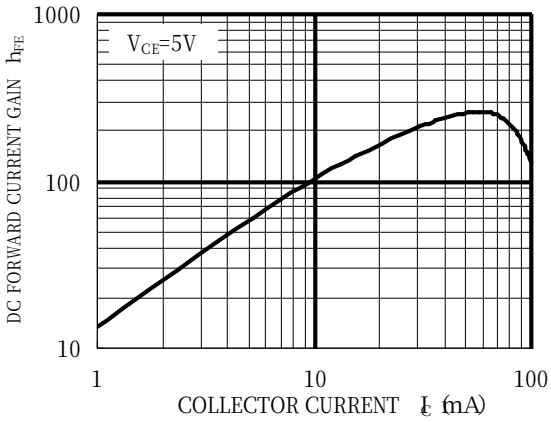
SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E break down voltage	I_C=100μA, R_{BE}=∞	50			V
I_{CBO}	Collector cut off current	V_{CB}=50V, I_E=0			0.1	μA
h_{FE}	DC forward current gain	V_{CE}=5V, I_C=5mA	33			—
$V_{CE(sat)}$	C to E saturation voltage	I_C=10mA, I_B=0.5mA		0.1	0.3	V
$V_{I(ON)}$	Input on voltage	V_{CE}=0.2V, I_C=5mA		0.7	1.2	V
$V_{I(OFF)}$	Input off voltage	V_{CE}=5V, I_C=100μA	0.4	0.6		V
R_1	Input resistance		0.7	1.0	1.3	kΩ
R_2/R_1	Resistance ratio		8	10	12	
f_T	Gain band width product	V_{CE}=6V, I_E=-10mA		200		MHz

TYPICAL CHARACTERISTICS

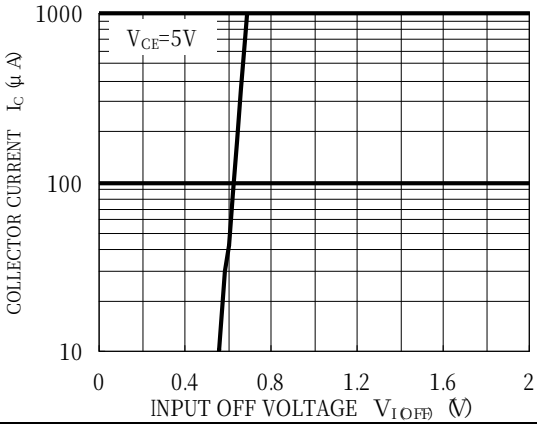
INPUT ON VOLTAGE VS.COLLECTOR CURRENT



DC FORWARD CURRENT GAIN VS.COLLECTOR CURRENT



COLLECTOR CURRENT VS.INPUT OFF VOLTAGE



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Jan.2003