RT1N431X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

DESCRIPTION

RT1N431X is a one chip transistor with built-in bias resistor,PNP type is RT1P431X.

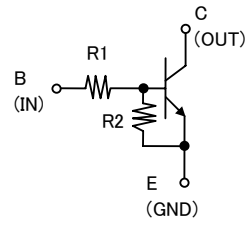
FEATURE

・Built-in bias resistor (R1=4.7kΩ,R2=4.7kΩ).

APPLICATION

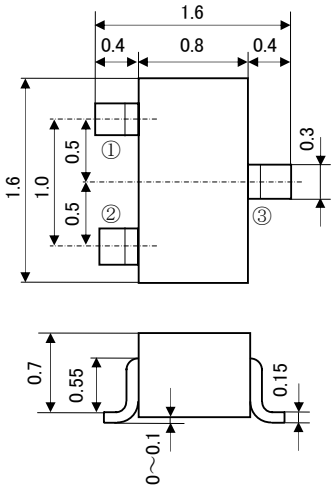
Inverted circuit,switching circuit,interface circuit, driver circuit.

Equivalent circuit



OUTLINE DRAWING UNIT:mm

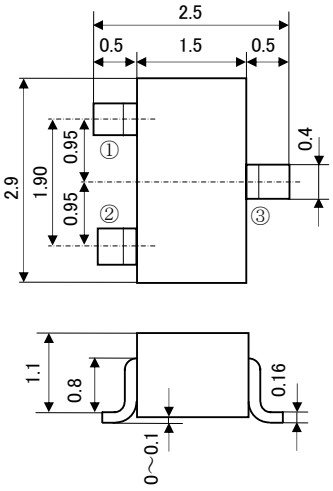
RT1N431U



JEITA:—
JEDEC:—

Terminal Connector
①:Base
②:Emitter
③:Collector

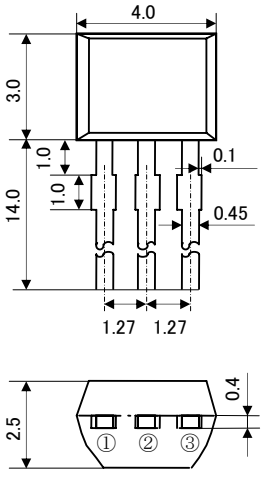
RT1N431C



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

Terminal Connector
①:Base
②:Emitter
③:Collector

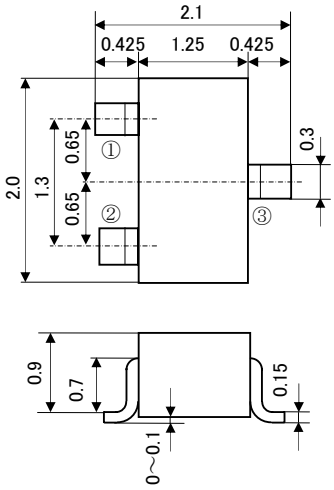
RT1N431S



JEITA:—
JEDEC:—

Terminal Connector
①:Emitter
②:Collector
③:Base

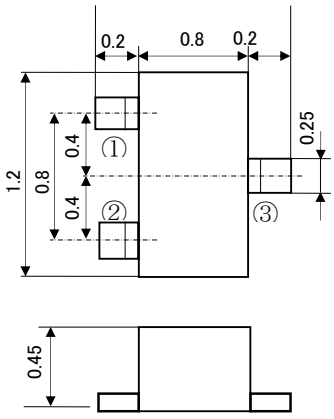
RT1N431M



JEITA:SC-70
JEDEC:—

Terminal Connector
①:Base
②:Emitter
③:Collector

RT1N431T



JEITA:—
JEDEC:—

Terminal Connector
①:Base
②:Emitter
③:Collector

RT1N431X SERIES

〈Transistor〉

Transistor With Resistor

For Switching Application

Silicon NPN Epitaxial Type

MAXIMUM RATING (Ta=25℃)

SYMBOL	PARAMETER	RATING					UNIT
		RT1N431T	RT1N431U	RT1N431M	RT1N431C	RT1N431S	
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℃)	125 (※)	125	150		450	mW
Tj	Junction temperature	+125		+150			℃
Tstg	Storage temperature	−55～+125		−55～+150			℃

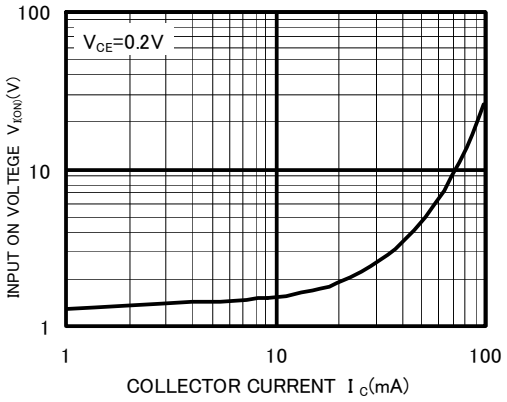
ELECTRICAL CHARACTERISTICS (Ta=25℃)

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

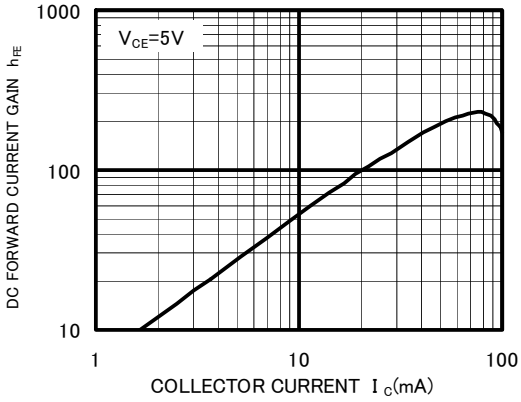
SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E break down voltage	I_C=100μA, R_{BE}=∞	50			V
I_{CBO}	Collector cut off current	V_{CB}=50V, I_E=0			0.1	μA
h_{FE}	DC forward current gain	V_{CE}=5V, I_C=10mA	20			—
$V_{CE(sat)}$	C to E saturation voltage	I_C=10mA, I_B=0.5mA		0.1	0.3	V
$V_{I(ON)}$	Input on voltage	V_{CE}=0.2V, I_C=5mA		1.4	2.3	V
$V_{I(OFF)}$	Input off voltage	V_{CE}=5V, I_C=100μA	0.8	1.1		V
R_1	Input resistance		3.3	4.7	6.1	kΩ
R_2/R_1	Resistance ratio		0.8	1.0	1.2	
f_T	Gain band width product	V_{CE}=6V, I_E=−10mA		200		MHz

TYPICAL CHARACTERISTICS

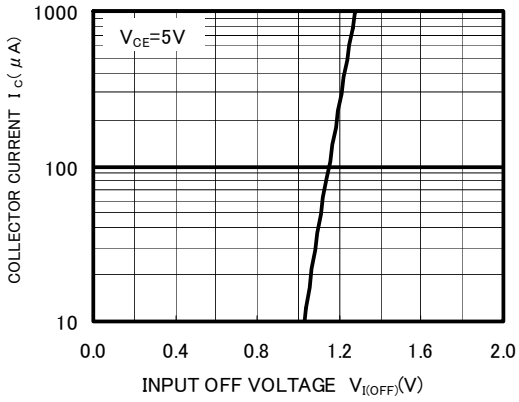
INPUT ON VOLTAGE
VS.COLLECTOR CURRENT



DC FORWARD CURRENT GAIN
VS.COLLECTOR CURRENT



COLLECTOR CURRENT
VS.INPUT OFF VOLTAGE



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Jan.2003