

RT1N137S

Transistor With Resistor
For Switching Application
Silicon NPN Epitaxial Type

DESCRIPTION

RT1N137S is a one chip transistor
with built-in bias resistor, PNP type is RT1P137S.

FEATURE

Built-in bias resistor ($R_1=1k\Omega$, $R_2=22k\Omega$)

High collector current ($I_C=1A$)

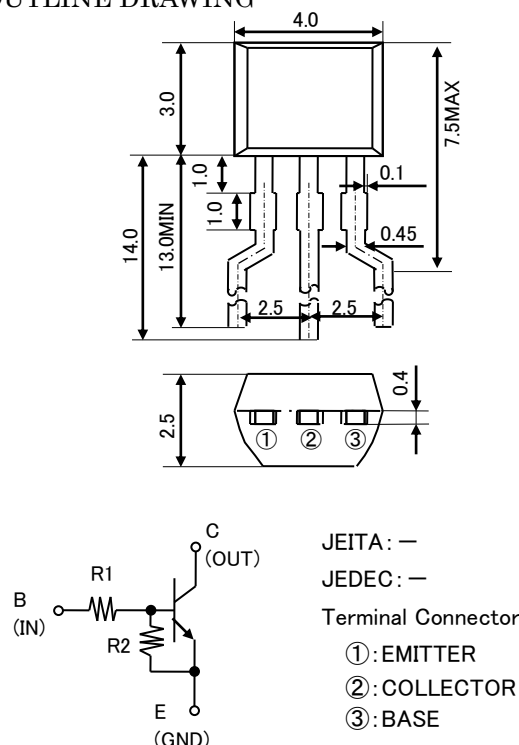
Low $V_{CE(sat)}$ $V_{CE(sat)}=0.3V$
(@ $I_C=300mA$ / $I_B=3mA$)

APPLICATION

Inverted circuit, Switching circuit, Interface circuit,
Driver circuit

OUTLINE DRAWING

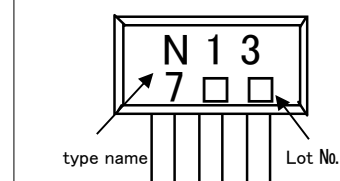
Unit: mm



MAXIMUM RATING ($T_a=25^\circ C$)

SYMBOL	PARAMETER	RATING	UNIT
V_{CBO}	Collector to Base voltage	40	V
V_{EBO}	Emitter to Base voltage	6	V
V_{CEO}	Collector to Emitter voltage	40	V
I_C	Collector current	1	A
I_{CM}	Peak Collector current	2	A
P_C	Collector dissipation	600	mW
T_j	Junction temperature	+150	$^\circ C$
T_{stg}	Storage temperature	-55~+150	$^\circ C$

MARKING



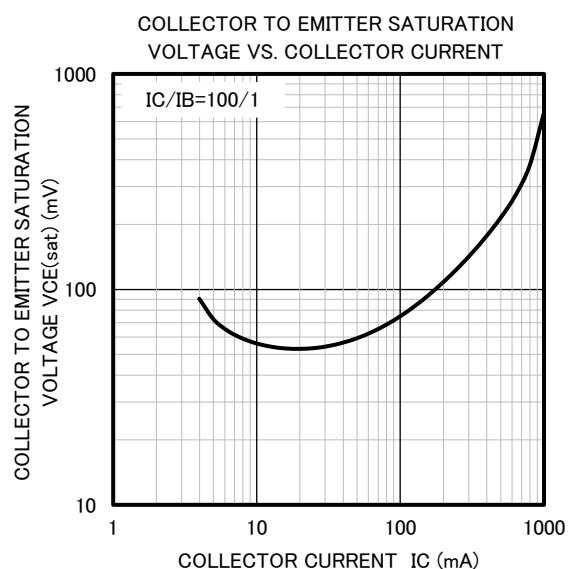
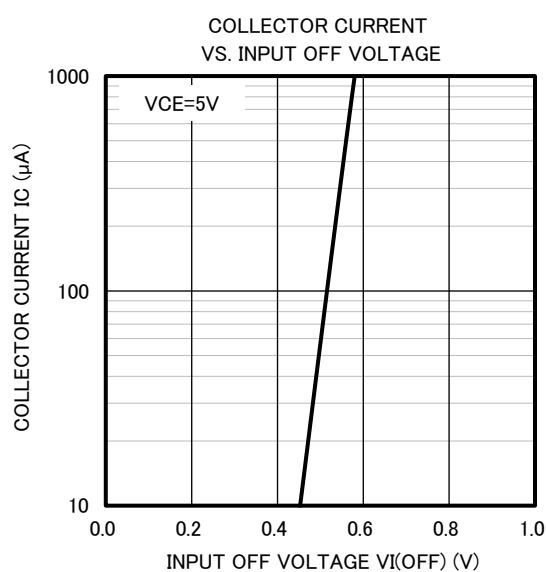
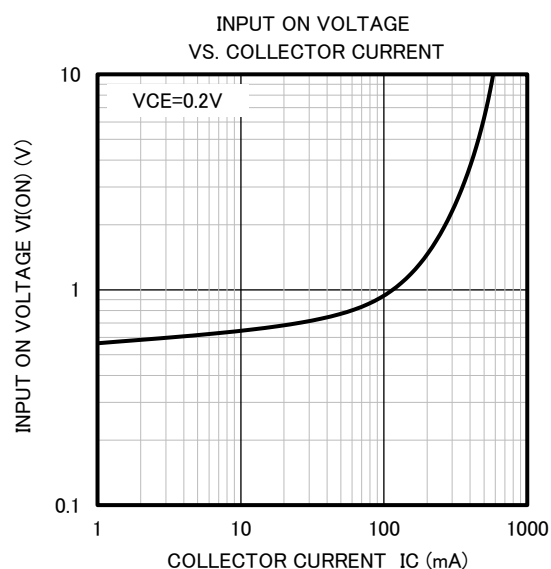
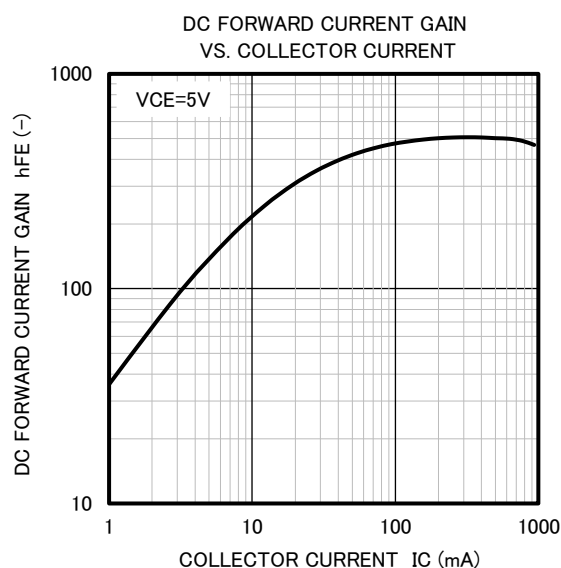
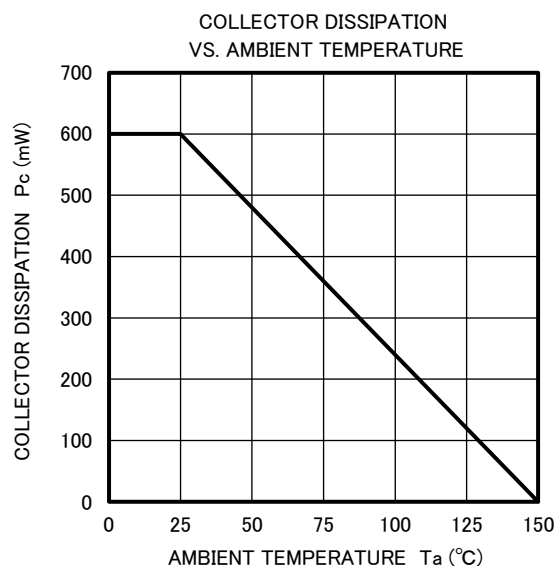
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CEO}$	C to E breakdown voltage	$I_C=1mA$, $R_{BE}=\infty$	40	—	—	V
I_{CBO}	Collector cut off current	$V_{CB}=40V$, $I_E=0$	—	—	0.1	μA
I_{EBO}	Emitter cut off current	$V_{EB}=5V$, $I_C=0$	168	217	310	μA
h_{FE}	DC forward current gain	$V_{CE}=6V$, $I_C=100mA$	100	—	—	—
$V_{CE(sat)}$	C to E saturation voltage	$I_C=300mA$, $I_B=3mA$	—	0.1	0.3	V
$V_{I(ON)}$	Input on voltage	$V_{CE}=0.2V$, $I_C=300mA$	—	2.3	4.0	V
$V_{I(OFF)}$	Input off voltage	$V_{CE}=5V$, $I_C=100\mu A$	0.4	0.5	—	V
R_1	Input resistor	—	0.7	1.0	1.3	$k\Omega$
R_2/R_1	Resistor ratio	—	20	22	24	—
f_T	Gain band width product	$V_{CE}=6V$, $I_E=-10mA$	—	150	—	MHz

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TYPICAL CHARACTERISTICS($T_a=25^{\circ}\text{C}$)



Keep safety first in your circuit designs!

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