RTAN230X SERIES

TRANSISTOR WITH RESISTOR
FOR MUTING APPLICATION
SILICON NPN EPITAXIAL TYPE

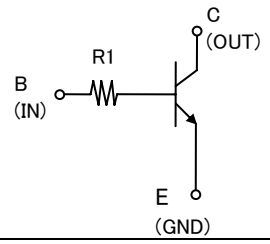
FEATURE

- Built-in bias resistor(R1=2.2kΩ)
- Small package for easy mounting.
- High reverse hFE
- Small collector to emitter saturation voltage.
  VCE(sat)=10mV(TYP.)(@IC=10mA/IB=0.5mA)
- Low on Resistance
  Ron=0.70Ω(TYP.)(@VI=5V)

APPLICATION

muting circuit , switching circuit

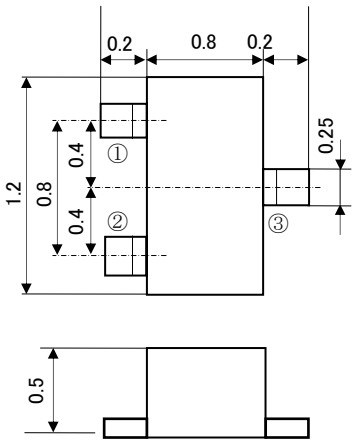
EQUIVALENT CIRCUIT



OUTLINE DRAWING

Unit : mm

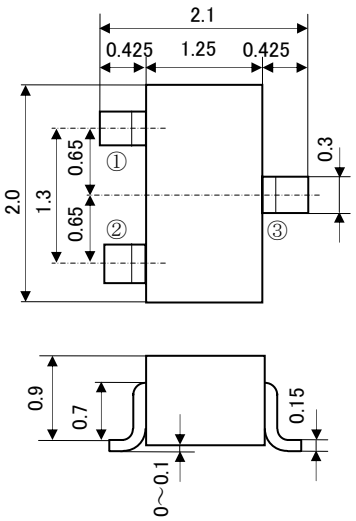
RTAN230T2 (PRELIMINARY)



JEITA, JEDEC : —
ISAHAYA : T-USM

TERMINAL CONNECTOR
①:BASE
②:EMITTER
③:COLLECTOR

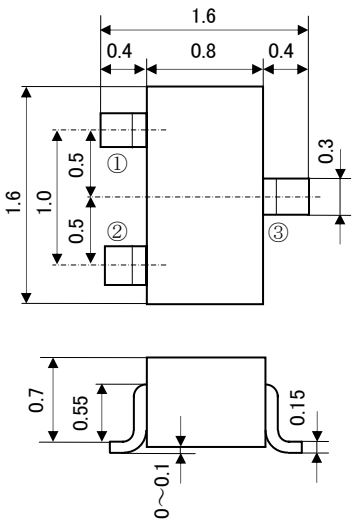
RTAN230M



JEITA : SC-70
JEDEC : —

TERMINAL CONNECTOR
①:BASE
②:EMITTER
③:COLLECTOR

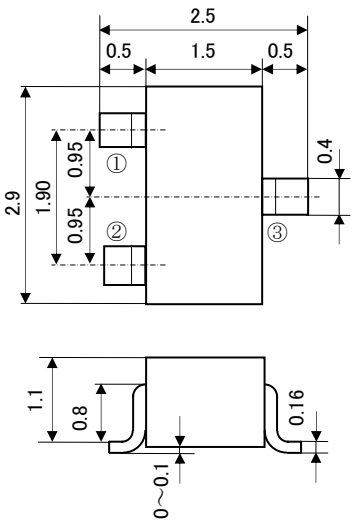
RTAN230U



JEITA : SC-75A
JEDEC : —

TERMINAL CONNECTOR
①:BASE
②:EMITTER
③:COLLECTOR

RTAN230C



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

TERMINAL CONNECTOR
①:BASE
②:EMITTER
③:COLLECTOR

RTAN230X SERIES

TRANSISTOR WITH RESISTOR
FOR MUTING APPLICATION
SILICON NPN EPITAXIAL TYPE

MAXIMUM RATING(Ta=25℃)

SYMBOL	PARAMETER	RATING				UNIT
		RTAN230T2	RTAN230U	RTAN230M	RTAN230C	
V_{CBO}	Collector to Base voltage	40				V
V_{EBO}	Emitter to Base voltage	40				V
V_{CEO}	Collector to Emitter voltage	20				V
I_C	Collector current	400				mA
P_C	Collector dissipation(Ta=25℃)	125(※)	150	200		mW
Tj	Junction temperature	+125	+150			℃
Tstg	Storage temperature	−55～+125	−55～+150			℃

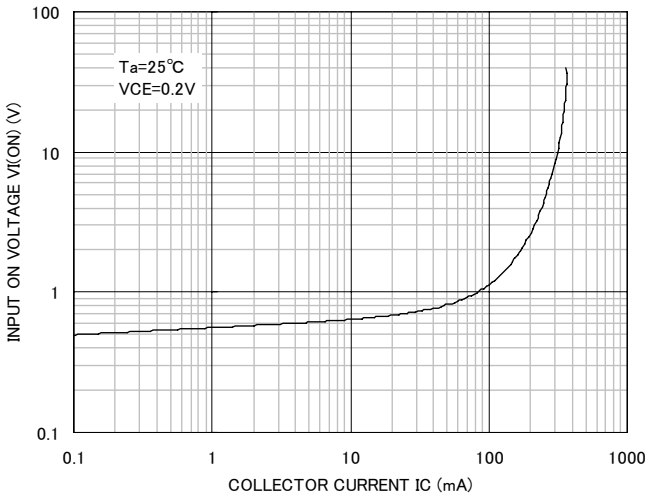
ELECTRICAL CHARACTERISTICS(Ta=25℃)

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

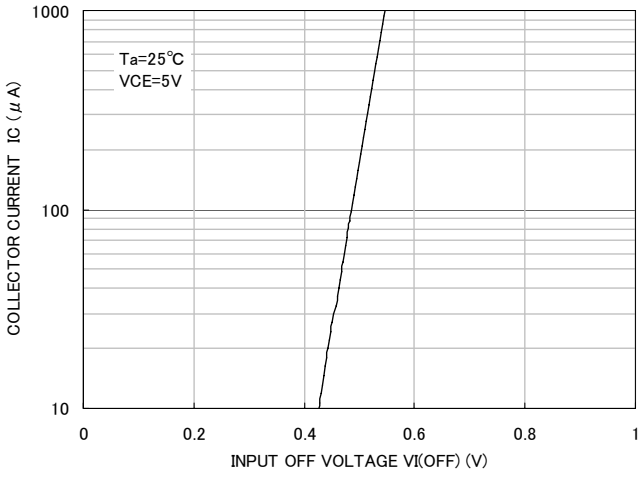
SYMBOL	PARAMETER	TEST CONDITION	LIMIT			UNIT
			MIN	TYP	MAX	
$V_{(BR)CBO}$	C to B break down voltage	I_C=50μA, I_E=0mA	40			V
$V_{(BR)EBO}$	E to B break down voltage	I_E=50μA, I_C=0mA	40			V
$V_{(BR)CEO}$	C to E break down voltage	I_C=1mA, R_{BE}=∞	20			V
I_{CBO}	Collector cut off current	V_{CB}=40V, I_E=0mA			0.5	μA
I_{EBO}	Emitter cut off current	V_{EB}=40V, I_C=0mA			0.5	μA
h_{FE}	DC forward current gain	V_{CE}=5V, I_C=10mA	820		2500	—
$V_{CE(sat)}$	C to E saturation voltage	I_C=10mA, I_B=0.5mA		10		mV
R_1	Input resistance		1.54	2.2	2.86	kΩ
f_T	Gain band width product	V_{CE}=10V, I_E=−10mA, f=100MHz		40		MHz
R_{ON}	Output "ON" resistance	V_I=5V, R_L=1kΩ		0.70		Ω

TYPICAL CHARACTERISTICS

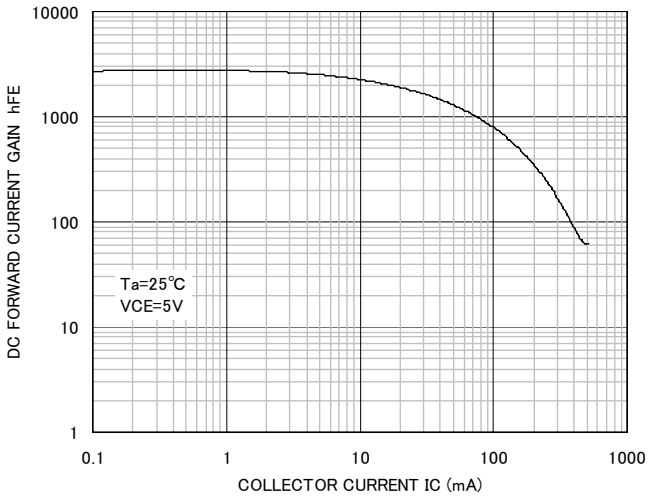
INPUT ON VOLTAGE
VS. COLLECTOR CURRENT



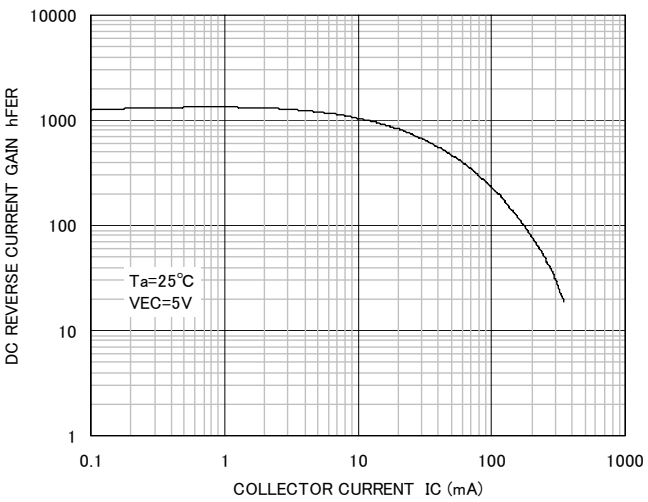
COLLECTOR CURRENT
VS. INPUT OFF VOLTAGE



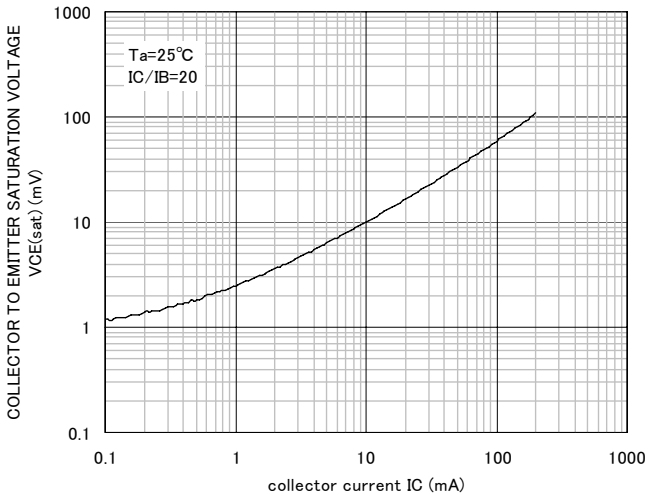
DC FORWARD CURRENT GAIN
VS. COLLECTOR CURRENT



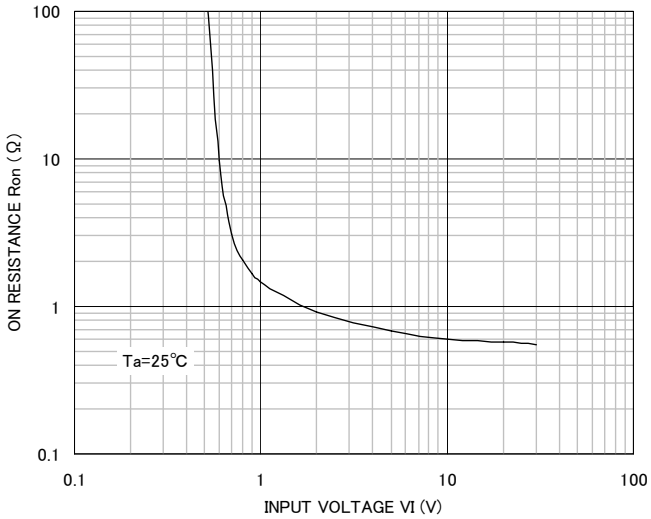
DC REVERSE CURRENT GAIN
VS. COLLECTOR CURRENT



COLLECTOR TO EMITTER SATURATION VOLTAGE
VS. COLLECTOR CURRENT



ON RESISTANCE VS. INPUT VOLTAGE



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Nov.2006