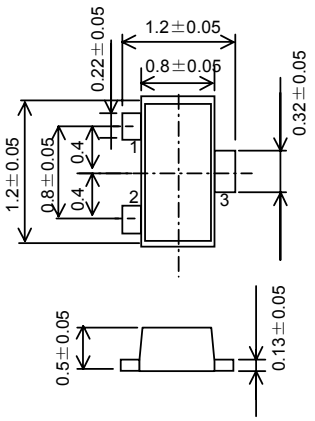
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

RN2130FV

Switching, Inverter Circuit, Interface Circuit
and Driver Circuit Applications

- Built-in bias resistors
- Simplified circuit design
- Reduced quantity of parts and manufacturing process
- Complementary to RN1130FV

Unit : mm



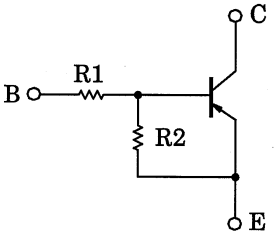
VESM

1.BASE
2.EMITTER
3.COLLECTOR

JEDEC	—
JEITA	—
TOSHIBA	2-1L1A

Weight : 0.0015mg (typ.)

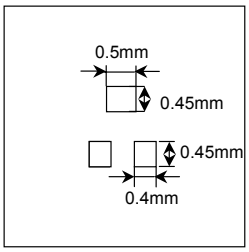
Equivalent Circuit



Maximum Ratings (Ta = 25°C)

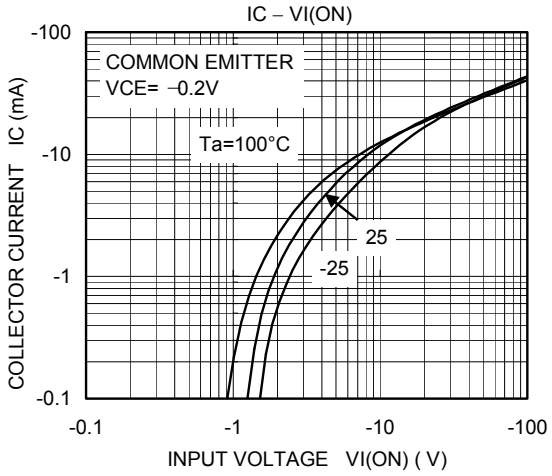
Characteristic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	−50	V
Collector-emitter voltage	V_{CEO}	−50	V
Emitter-base voltage	V_{EBO}	−10	V
Collector current	I_C	−100	mA
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55~150	°C

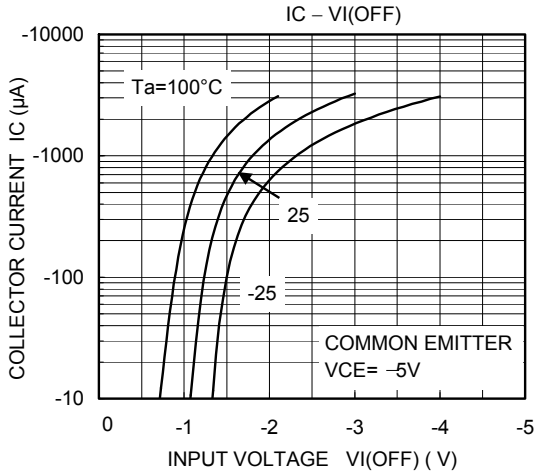
Note: Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6 mmt)

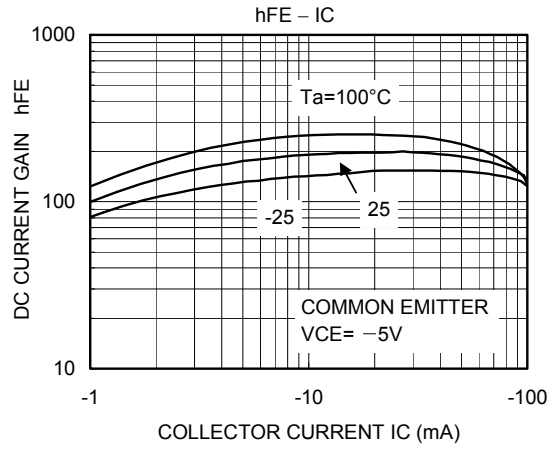


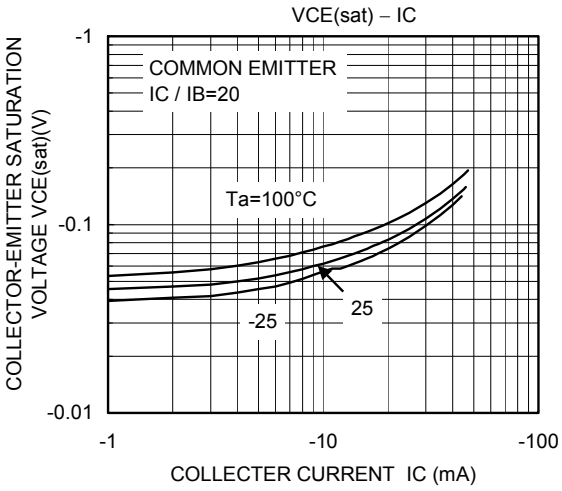
Electrical Characteristics (Ta = 25°C)

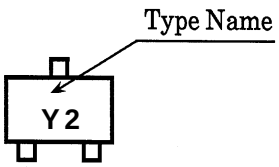
Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	V_{CB} = −50V, I_E = 0	—	—	−100	nA
	I_{CEO}	V_{CB} = −50V, I_B = 0	—	—	−500	nA
Emitter cut-off current	I_{EBO}	V_{EB} = −10V, I_C = 0	−38	—	−72	uA
DC current gain	h_{FE}	V_{CE} = −5V, I_C = −10mA	100	—	—	
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	I_C = −5mA, I_B = −0.25mA	—	−0.1	−0.3	V
Input voltage (ON)	$V_{I(ON)}$	V_{CE} = −0.2V, I_C = −5mA	−1.7	—	−8.2	V
Input voltage (OFF)	$V_{I(OFF)}$	V_{CE} = −5V, I_C = − 0.1mA	−1.0	—	−1.6	V
Transition frequency	f_T	V_{CE} = 10V, I_C = −5mA	—	200	—	MH_z
Collector output capacitance	C_{ob}	V_{CB} = −10V, I_E = 0, f = $1MH_z$	—	3	—	pF
Input resistance	R1	—	70	100	130	kΩ
Resistance ratio	R1/R2	—	0.8	1.0	1.2	


IC – VI(ON)
COMMON EMITTER
VCE= −0.2V
Ta=100°C
25
-25
COLLECTOR CURRENT IC (mA)
INPUT VOLTAGE VI(ON) (V)
-100
-10
-1
-0.1
-0.1
-1
-10
-100


IC – VI(OFF)
Ta=100°C
25
-25
COMMON EMITTER
VCE= −5V
COLLECTOR CURRENT IC (μA)
INPUT VOLTAGE VI(OFF) (V)
-10000
-1000
-100
-10
0
-1
-2
-3
-4
-5


hFE – IC
Ta=100°C
-25
25
COMMON EMITTER
VCE= −5V
DC CURRENT GAIN hFE
COLLECTOR CURRENT IC (mA)
1000
100
10
-1
-10
-100


VCE(sat) – IC
COMMON EMITTER
IC / IB=20
Ta=100°C
25
-25
COLLECTOR-EMITTER SATURATION VOLTAGE VCE(sat)(V)
COLLECTER CURRENT IC (mA)
-1
-0.1
-0.01
-1
-10
-100

Type Name	Marking
RN2130FV	

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