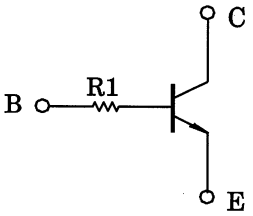
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

RN1119MFV

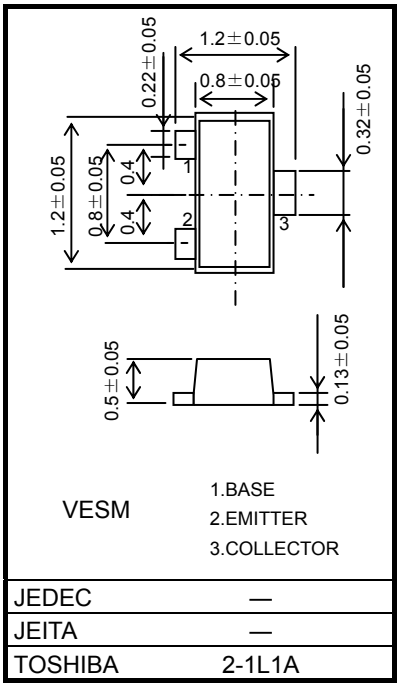
Switching Applications
Inverter Circuit Applications
Interface Circuit Applications
Driver Circuit Applications

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Complementary to RN2119MFV

Equivalent Circuit



Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	2-1L1A

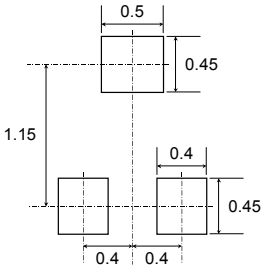
Weight: 1.5 mg (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characterisstic	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	50	V
Collector-emitter voltage	V_{CEO}	50	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	100	mA
Collector power dissipation	P_C (Note1)	150	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°C

Land Pattern Example

Unit: mm



Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

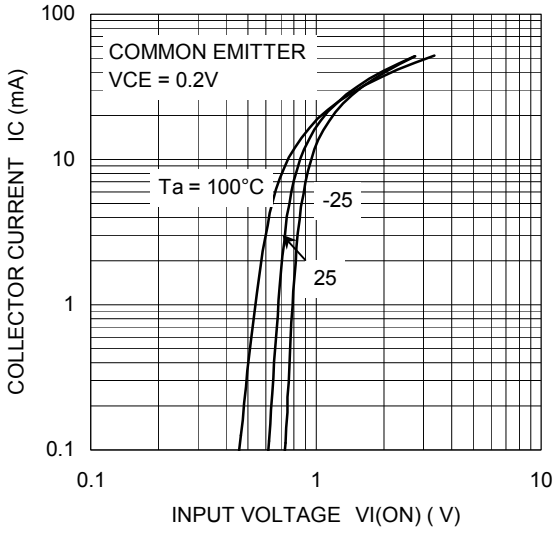
Note1：Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6 mmt)

Start of commercial production
2005-09

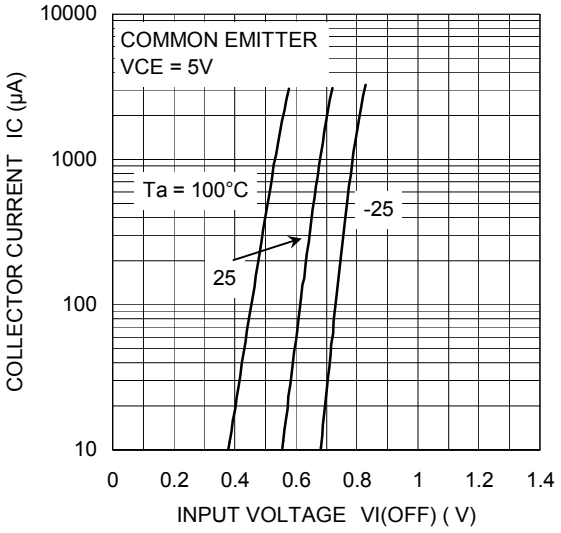
Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I_{CBO}	—	V_{CB} = 50V, I_E = 0	—	—	100	nA
Emitter cut-off current	I_{EBO}	—	V_{EB} = 5V, I_C = 0	—	—	100	nA
DC current gain	h_{FE}	—	V_{CE} = 5V, I_C = 1mA	120	—	700	—
Collector-emitter saturation voltage	$V_{CE\ (sat)}$	—	I_C = 5mA, I_B = 0.5mA	—	0.1	0.3	V
Collector output capacitance	C_{ob}	—	V_{CB} = 10V, I_E = 0, f = 1MHz	—	0.7	—	pF
Input resistor	R1	—	—	0.7	1.0	1.3	kΩ

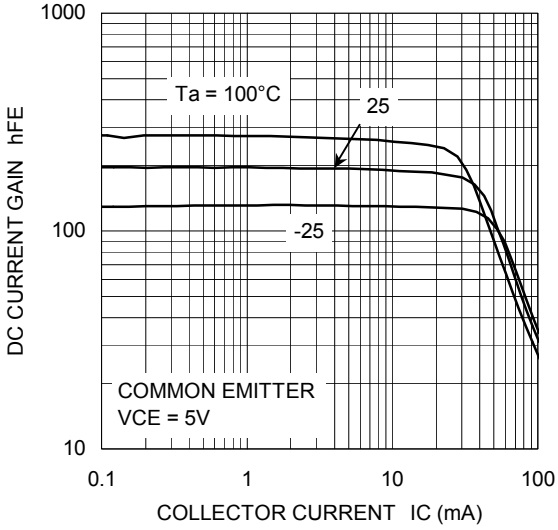
IC - VI(ON)



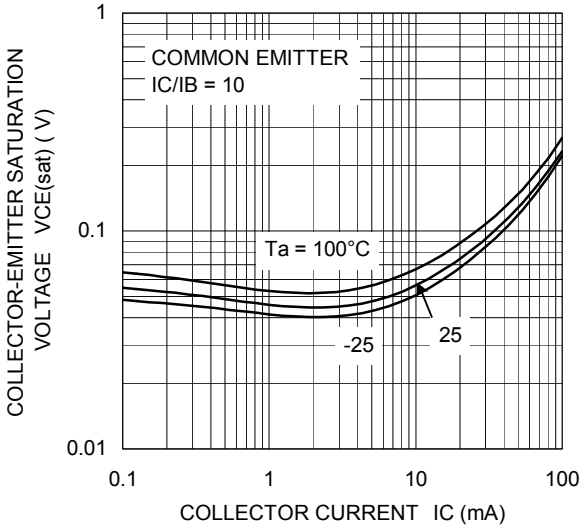
IC - VI(OFF)

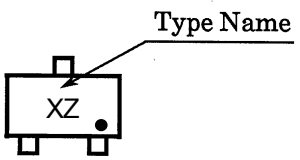


hFE - IC



VCE(sat) - IC



Type Name	Marking
RN1119MFV	

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