

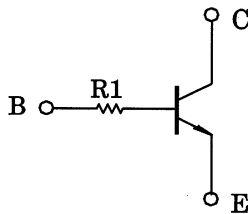
TOSHIBA Transistor Silicon NPN Epitaxial Type (PCT Process)

# RN1119MFV

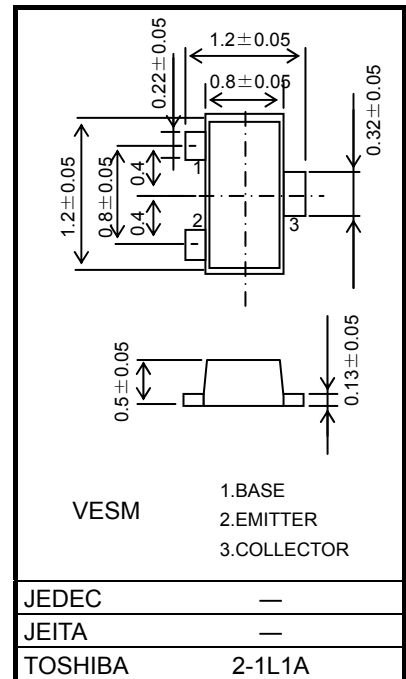
Switching Applications  
 Inverter Circuit Applications  
 Interface Circuit Applications  
 Driver Circuit Applications

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

### Equivalent Circuit



Unit: mm



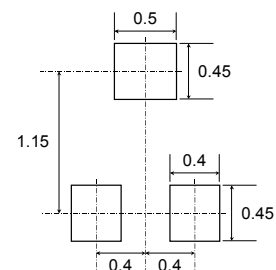
Weight: 1.5 mg (typ.)

### Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	50	V
Collector-emitter voltage	V <sub>CEO</sub>	50	V
Emitter-base voltage	V <sub>EBO</sub>	5	V
Collector current	I <sub>C</sub>	100	mA
Collector power dissipation	P <sub>C</sub> (Note1)	150	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature range	T <sub>stg</sub>	-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.

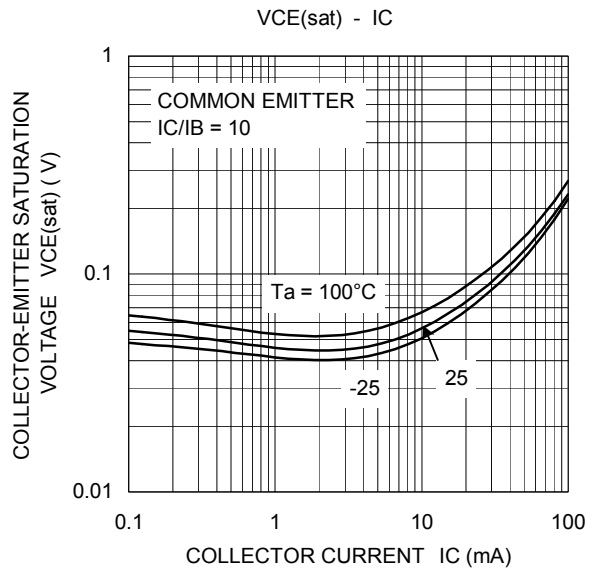
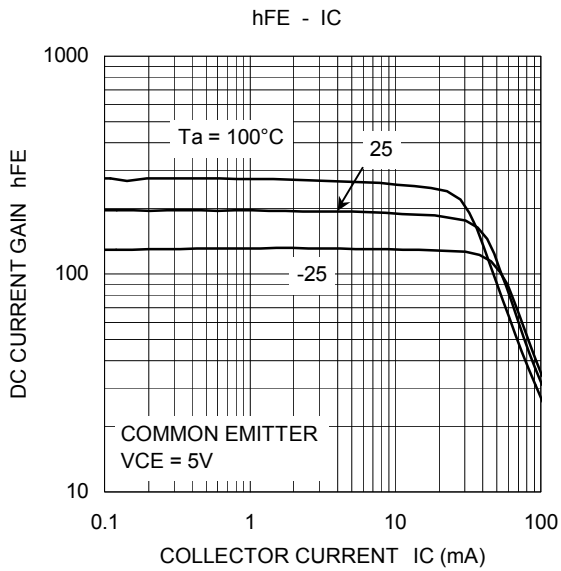
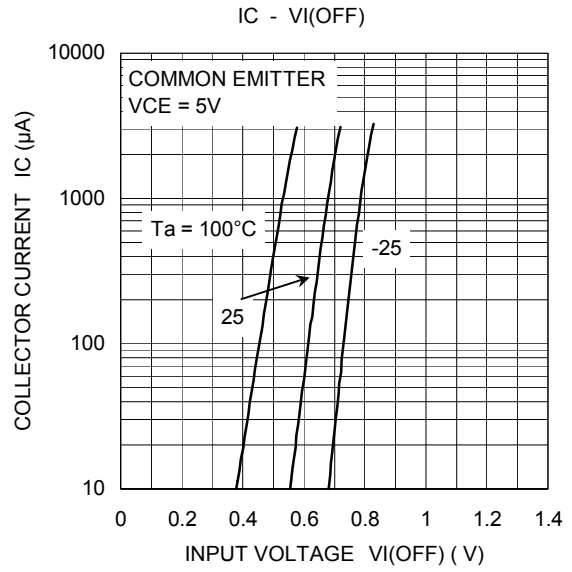
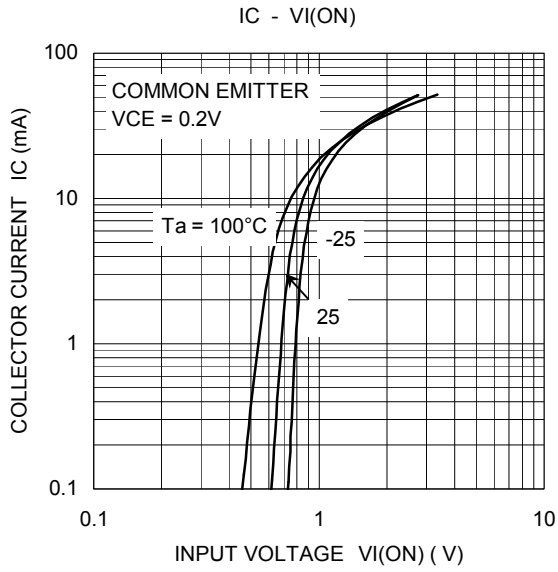
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

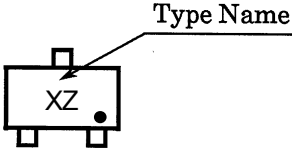
Note1 : Mounted on FR4 board (25.4 mm × 25.4 mm × 1.6 mm)

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	k $\Omega$



Type Name	Marking
RN1119MFV	 <p>The diagram shows a rectangular component with a small square protrusion at the top center and two small square protrusions at the bottom. The letters 'XZ' are printed on the front face. A line with an arrow points from the text 'Type Name' to the top protrusion.</p>

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**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
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