Unit: mm

TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor built-in Transistor)

RN2112MFV,RN2113MFV

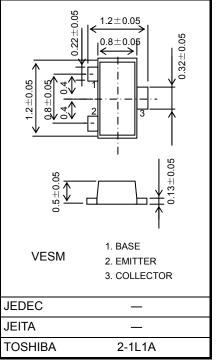
Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications

- Ultra-small package, suited to very high density mounting
- Incorporating a bias resistor into the transistor reduces the number of parts, so enabling the manufacture of ever more compact equipment and lowering assembly cost.
- A wide range of resistor values is available for use in various circuits.
- Complementary to the RN1112MFV and RN1113MFV

Equivalent Circuit

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Collector-base voltage	V _{CBO}	-50	٧
Collector-emitter voltage	V _{CEO}	-50	٧
Emitter-base voltage	V _{EBO}	-5	٧
Collector current	IC	-100	mA
Collector power dissipation	P _C (Note 1)	150	mW
Junction temperature	Tj	150	°C
Storage temperature range	T _{stg}	-55 to 150	°C



Weight: 1.5 mg (typ.)

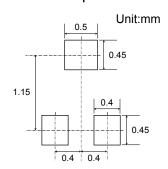
Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within 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).

Note 1: Mounted on an FR4 board (25.4 mm × 25.4 mm × 1.6 mmt)

Land Pattern Example

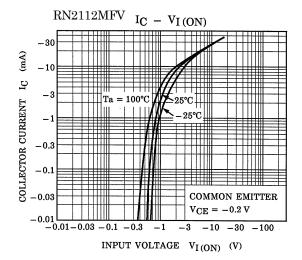
Note:

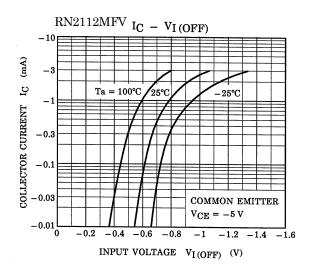


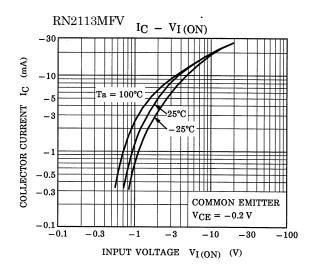


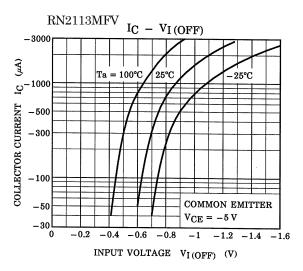
Electrical Characteristics (Ta = 25°C)

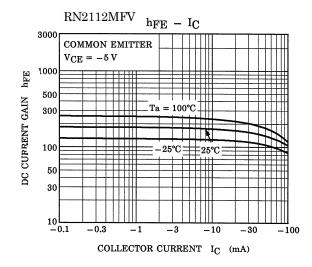
Characteristic		Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cutoff current		I _{CBO}	_	$V_{CB} = -50 \text{ V}, I_{E} = 0$	_	_	-100	nA
Emitter cutoff current		I _{EBO}	_	$V_{EB} = -5 \text{ V}, I_{C} = 0$	_	_	-100	nA
DC current gain		h _{FE}	_	$V_{CE} = -5 \text{ V}, I_{C} = -1 \text{ mA}$	120	_	400	-
Collector-emitter saturation voltage		V _{CE} (sat)	_	$I_C = -5 \text{ mA}, I_B = -0.5 \text{ mA}$	_	-0.1	-0.3	V
Collector output capacitance		C _{ob}	_	$V_{CB} = -10 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$	_	0.9	_	pF
Input resistor	RN2112MFV	R1 —		_	15.4	22	28.6	kΩ
	RN2113MFV		_		32.9	47	61.1	

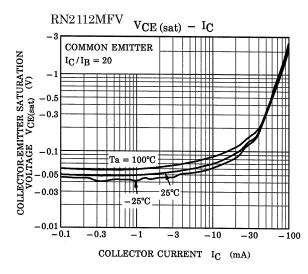


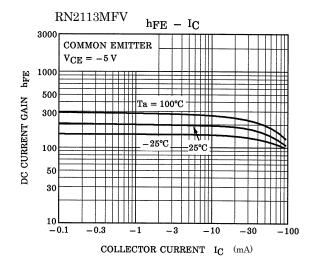


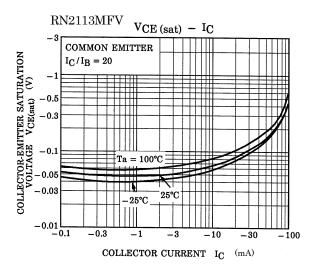












Marking

Type Name	Marking	
RN2112MFV	Type Name Y N	
RN2113MFV	Type Name Y P	

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