Unit: mm

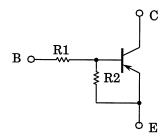
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process)

RN2114MFV,RN2115MFV,RN2116MFV RN2117MFV,RN2118MFV

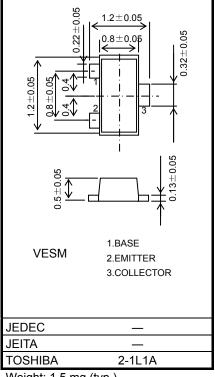
Switching Applications Inverter Circuit Applications Interface Circuit Applications Driver Circuit Applications

- 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 RN1114MFV to RN1118MFV

Equivalent Circuit and Bias Resistor Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN2114MFV	1	10
RN2115MFV	2.2	10
RN2116MFV	4.7	10
RN2117MFV	10	4.7
RN2118MFV	47	10
	RN2114MFV RN2115MFV RN2116MFV RN2117MFV	RN2114MFV 1 RN2115MFV 2.2 RN2116MFV 4.7 RN2117MFV 10



Weight: 1.5 mg (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristi	Symbol	Rating	Unit		
Collector-base voltage	RN2114MFV	V _{CBO}	-50	V	
Collector-emitter voltage	to RN2118MFV	V _{CEO}	-50	V	
Emitter-base voltage	RN2114MFV		-5		
	RN2115MFV		-6		
	RN2116MFV	V _{EBO}	-7	V	
	RN2117MFV		-15		
	RN2118MFV		-25		
Collector current		Ι _C	-100	mA	
Collector power dissipation	RN2114MFV to	P _C (Note1)	150	mW	
Junction temperature	RN2118MFV	Tj	150	°C	
Storage temperature range		T _{stg}	-55 to 150	°C	

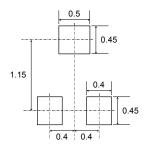
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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 \times 25.4 mm \times 1.6mmt)

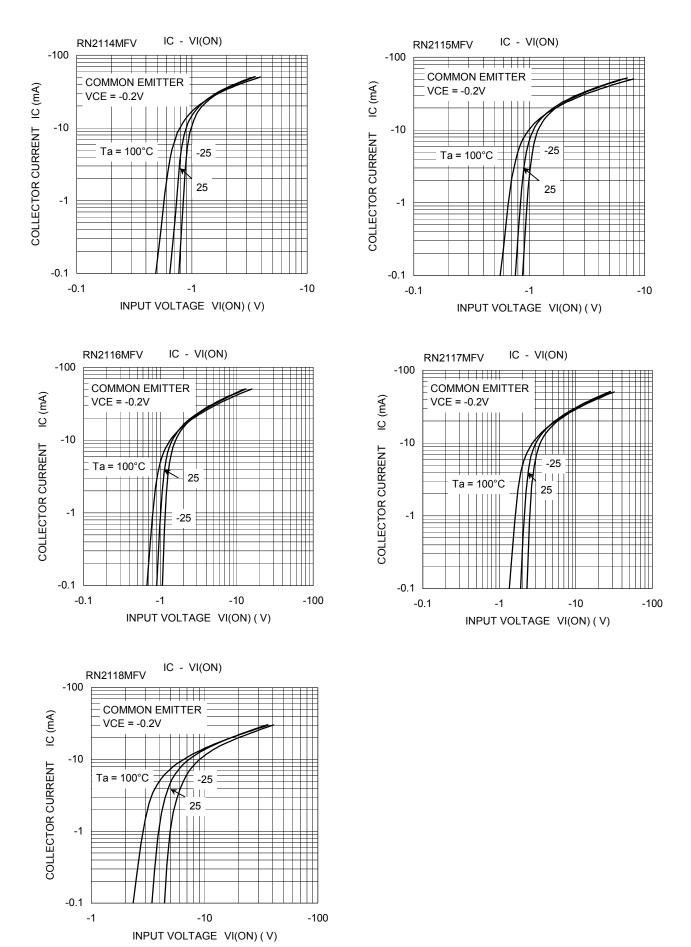
Land Pattern Example unit: mm

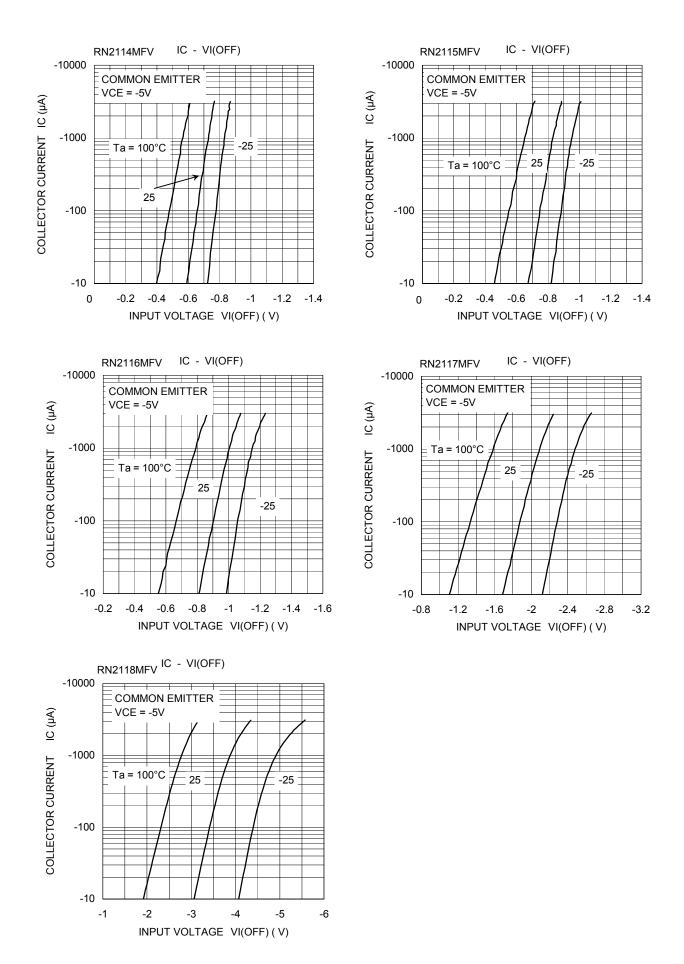
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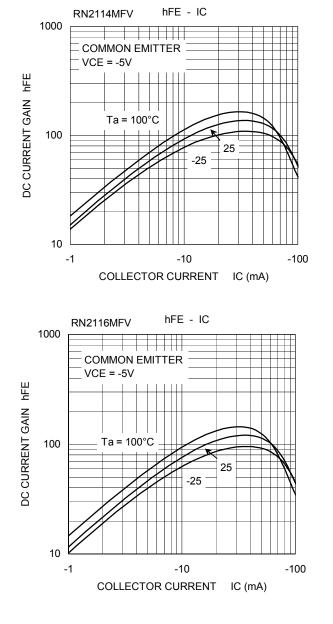


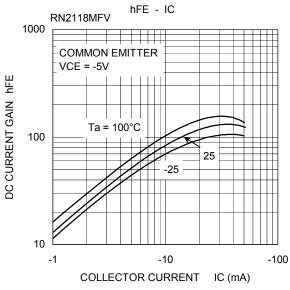
Electrical Characteristics (Ta = 25°C)

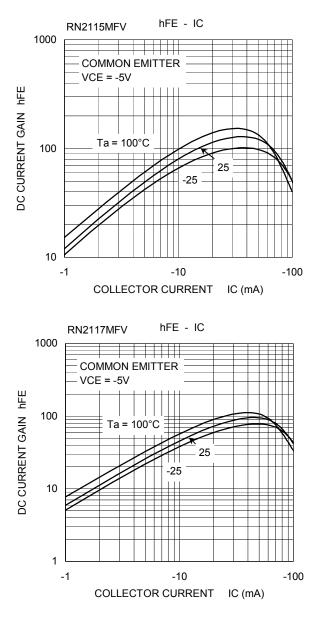
Characteristic		Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	RN2114MFV to 2118MFV	I _{CBO}		V_{CB} = -50V, I _E = 0	-	-	-100	nA
				V_{CE} = -50V, I _B = 0	—	—	-500	
Emitter cut-off current	RN2114MFV	IEBO	_	V_{EB} = -5V, I _C = 0	-0.35	—	-0.65	mA
	RN2115MFV			V_{EB} = -6V, I _C = 0	-0.37	—	-0.71	
	RN2116MFV			V_{EB} = -7V, I _C = 0	-0.36	—	-0.68	
	RN2117MFV			$V_{EB} = -15V, I_C = 0$	-0.78	_	-1.46	
	RN2118MFV			$V_{EB} = -25V, I_C = 0$	-0.33	_	-0.63	
DC current gain	RN2114MFV to 16MFV, 18MFV	h _{FE}	_	V _{CE} = -5V, I _C = -10mA	50	—	_	
	RN2117MFV				30	_	—	
Collector-emitter saturation voltage	RN2114MFV to 2118MFV	V _{CE(sat)}	_	I _C = -5mA, I _B = -0.5mA	_	-0.1	-0.3	v
	RN2114MFV				-0.5	-	-2.0	V
	RN2115MFV				-0.6	—	-2.5	
Input voltage (ON)	RN2116MFV	V _{I (ON)}	_	$V_{CE} = -0.2V, I_{C} = -5mA$	-0.7	_	-2.5	
	RN2117MFV				-1.5	_	-3.5	
	RN2118MFV				-2.5	_	-10.0	
	RN2114MFV	VI (OFF)	_	V _{CE} = -5V, I _C = -0.1mA	-0.3	—	-0.9	V
	RN2115MFV				-0.3	—	-1.0	
Input voltage (OFF)	RN2116MFV				-0.3	_	-1.1	
	RN2117MFV				-0.3	—	-3.0	
	RN2118MFV				-0.5	—	-5.7	
Collector output capacitance	RN2114MFV to 2118MFV	C _{ob}	_	V _{CB} = -10V, I _E = 0, f = 1MHz	_	0.9	_	pF
	RN2114MFV	R1	_	_	0.7	1.0	1.3	-
	RN2115MFV				1.54	2.2	2.86	
Input resistor	RN2116MFV				3.29	4.7	6.11	kΩ
	RN2117MFV				7	10	13	-
	RN2118MFV				32.9	47	61.1	
Resistor ratio	RN2114MFV	R1/R2	_	_	—	0.1	—	
	RN2115MFV				_	0.22	_	
	RN2116MFV				_	0.47	_	
	RN2117MFV				_	2.13	_	
	RN2118MFV				_	4.7	_	

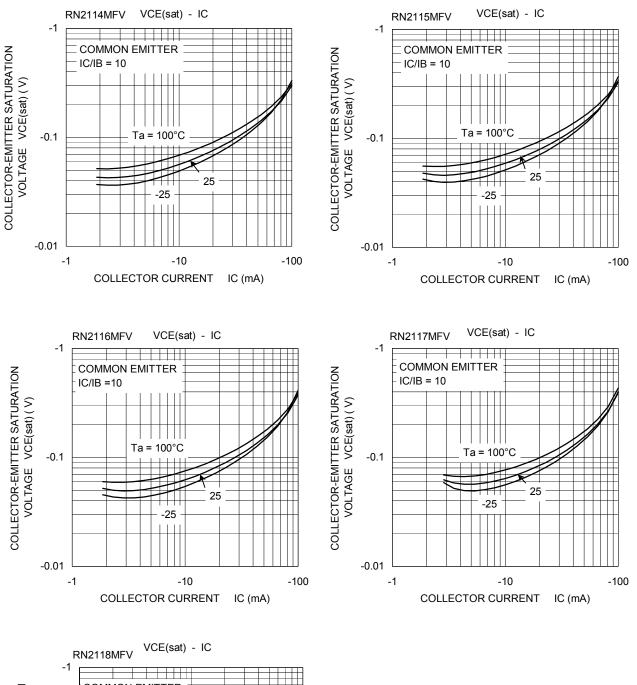


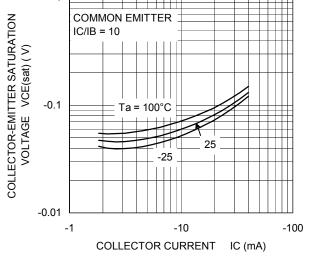












Type Name	Marking
RN2114MFV	Type Name YQ
RN2115MFV	Type Name YS •
RN2116MFV	Type Name YT •
RN2117MFV	
RN2118MFV	Type Name YW

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