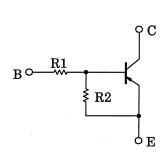
TOSHIBA Transistor Silicon PNP Epitaxial Type (PCT Process) (Bias Resistor built-in Transistor)

RN2421, RN2422, RN2423, RN2424 RN2425, RN2426, RN2427

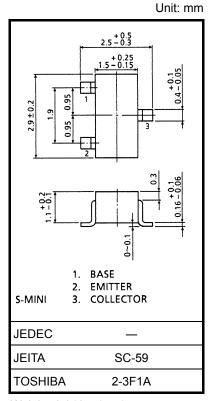
Switching, Inverter Circuit, Interface Circuit and Driver Circuit Applications

- High current type $(I_{C(MAX)} = -800 \text{mA})$
- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process
- Low Vce (sat)
- Complementary to RN1421 to RN1427

Equivalent Circuit and Bias Resistor Values



Type No.	R1 (kΩ)	R2 (kΩ)
RN2421	1	1
RN2422	2.2	2.2
RN2423	4.7	4.7
RN2424	10	10
RN2425	0.47	10
RN2426	1	10
RN2427	2.2	10



Weight: 0.012 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit		
Collector-Base voltage	RN2421 to 2427	V_{CBO}	-50	V	
Collector-Emitter voltage	1(1)2421 (0 2421	V _{CEO}	-50	V	
Emitter-Base voltage	RN2421 to 2424		-10	V	
	RN2425, 2426	V_{EBO}	-5		
	RN2427		-6	1	
Collector current		I _c	-800	mA	
Collector power dissipation	RN2421 to 2427	Pc	200	mW	
Junction temperature	KN2421 (0 2421	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).

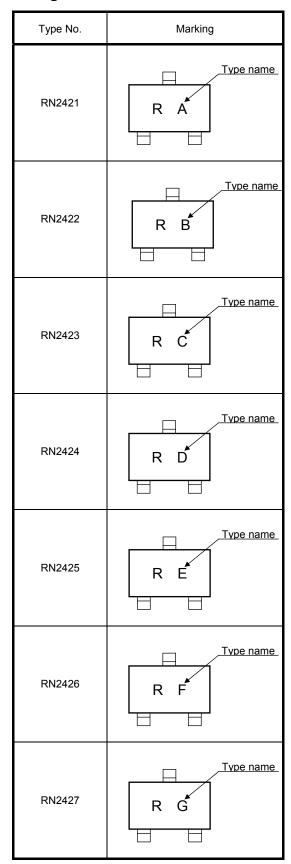
Start of commercial production 1988-02



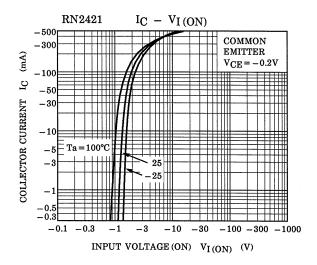
Electrical Characteristics (Ta = 25°C)

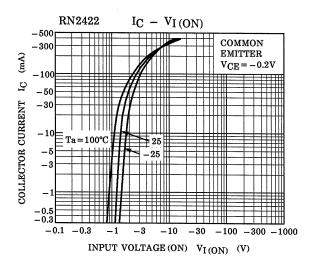
Characteri	stics	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	DN2421 to 2427	I _{CBO}	_	$V_{CB} = -50V$, $I_{E} = 0$	_	_	-100	·- A
	RN2421 to 2427	I _{CEO}	_	V _{CE} = -50V, I _B = 0	_	_	-500	nA
Emitter cut-off current	RN2421	I _{EBO}	_	V _{EB} = -10V, I _C = 0	-3.85	_	-7.14	
	RN2422		_		-1.75	_	-3.25	
	RN2423		_		-0.82	_	-1.52	
	RN2424		_		-0.38	_	-0.71	mA
	RN2425		_	V _{EB} = −5V, I _C = 0	-0.365	_	-0.682	
	RN2426		_		-0.35	_	-0.65	
	RN2427		_	$V_{EB} = -6V, I_C = 0$	-0.378	_	-0.703	
DC current gain	RN2421		_		60	_	_	
	RN2422		_		65	_	_	
	RN2423		_		70	_	_	
	RN2424	h_{FE}	_	$V_{CE} = -1V, I_{C} = -100mA$	90	_	_	
	RN2425		_		90	_	_	
	RN2426		_		90	_	_	
	RN2427		_		90	_	_	
Collector-Emitter	RN2421	Vo= (,)		$I_C = -50 \text{mA}, I_B = -2 \text{mA}$		_	-0.25	V
saturation voltage	RN2422 to 2427	V _{CE} (sat)		I _C = -50mA, I _B = -1mA	1 -	_	-0.25	V
	RN2421		_		-1.0	_	-3.5	
	RN2422		_		-1.4	_	-4.5	V
Input voltage (ON)	RN2423	VI (ON)	_	V _{CE} = -0.2V I _C = -100mA	-2.0	_	-6.5	
	RN2424		_		-3.0	_	-12.0	
	RN2425		_		-0.6	_	-2.0	
	RN2426		_		-0.7	_	-2.5	
	RN2427		_		-1.0	_	-3.0	
Input voltage (OFF)	RN2421 to 2424	V _I (OFF)	_	V _{CE} = -5V, I _C = -0.1mA	-0.8	_	-1.3	
	RN2425, 2426		_		-0.4	_	-0.8	V
	RN2427		_		-0.5	_	-1.0	
Transition frequency	RN2421 to 2427	f _T	_	$V_{CE} = -5V, I_{C} = -20mA$	_	200	_	MHz
Collector output capacitance	RN2421 to 2427	C _{ob}	_	$V_{CB} = -10V, I_E = 0$ f = 1MHz	_	13	_	pF
Input resistor	RN2421	R1			0.7	1.0	1.3	
	RN2422		_	_	1.54	2.2	2.86	kΩ
	RN2423				3.29	4.7	6.11	
	RN2424		_		7	10	13	
	RN2425		_		0.329	0.47	0.61	
	RN2426			0.7 1.0 1.54 2.2	0.7	1.0	1.3	
	RN2427		_		2.86			
Resistor ratio	RN2421 to 2424	- R1/R2	_	_	0.9	1.0	1.1	
	RN2425		_		0.0423	0.047	0.0517	
	RN2426		_		0.09	0.1	0.11	
	RN2427		_		0.2	0.22	0.24	

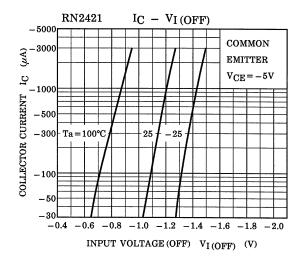
Marking

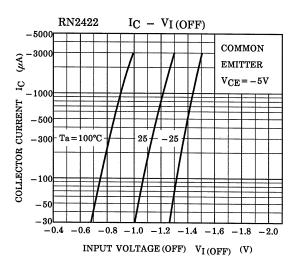


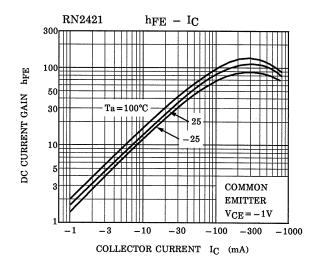
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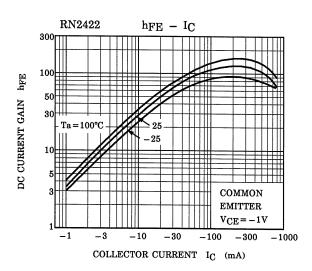


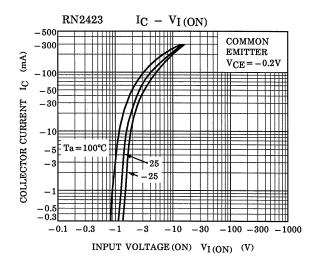


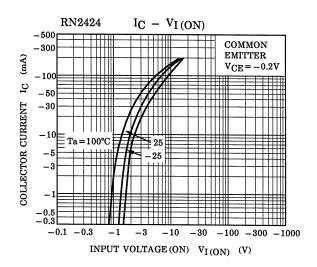


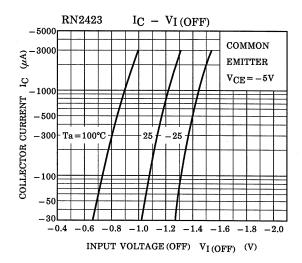


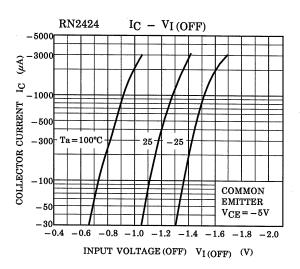


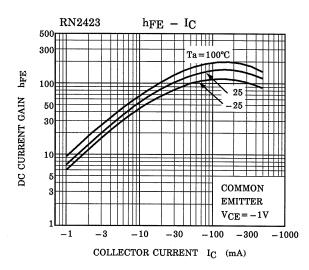


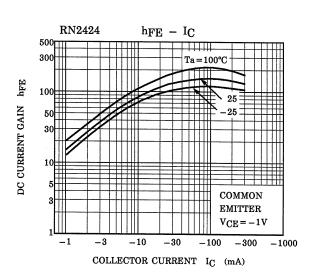


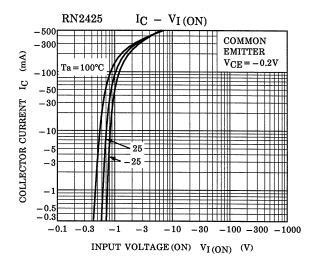


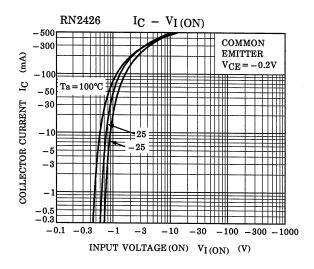


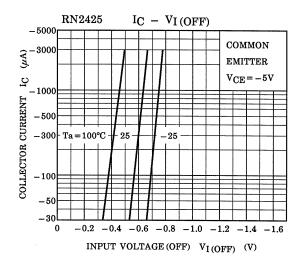


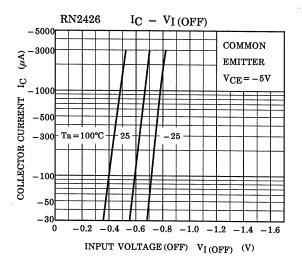


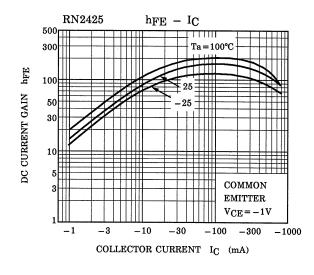


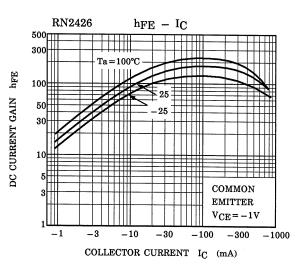


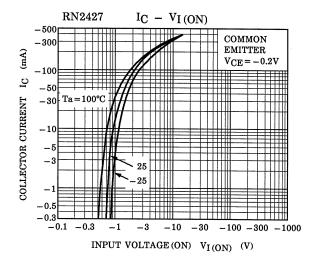


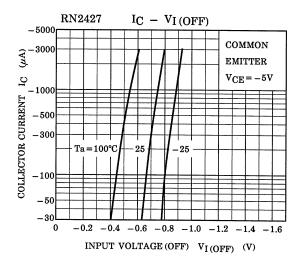


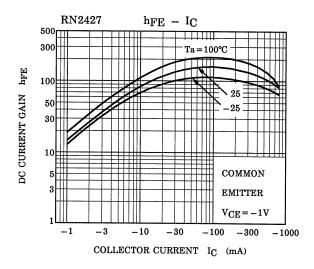












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