

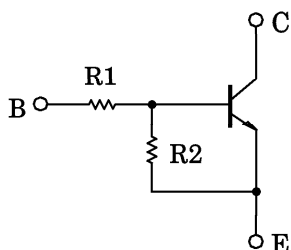
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

RN1421, RN1422, RN1423, RN1424 RN1425, RN1426, RN1427

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS

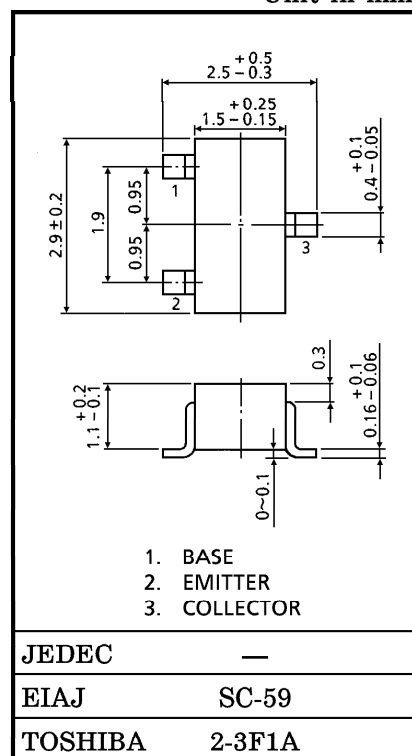
- High Current Type (I_C (MAX.) = 800 mA)
- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts Manufacturing Process
- Low V_{CE} (sat)
- Complementary to RN2421~2427

EQUIVALENT CIRCUIT BIAS RESISTOR VALUES



TYPE No.	R1 (k Ω)	R2 (k Ω)
RN1421	1	1
RN1422	2.2	2.2
RN1423	4.7	4.7
RN1424	10	10
RN1425	0.47	10
RN1426	1	10
RN1427	2.2	10

Unit in mm



Weight : 0.012 g

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

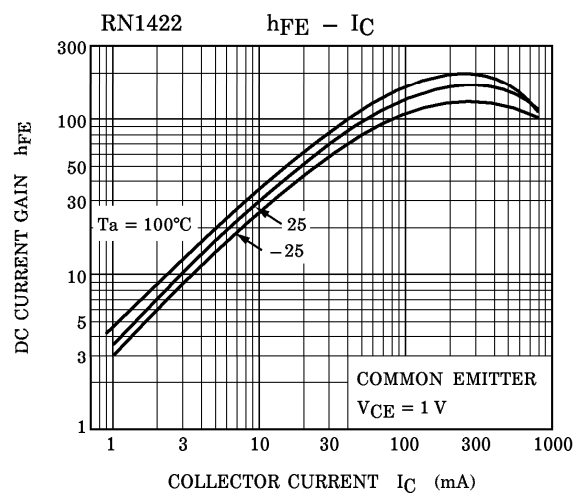
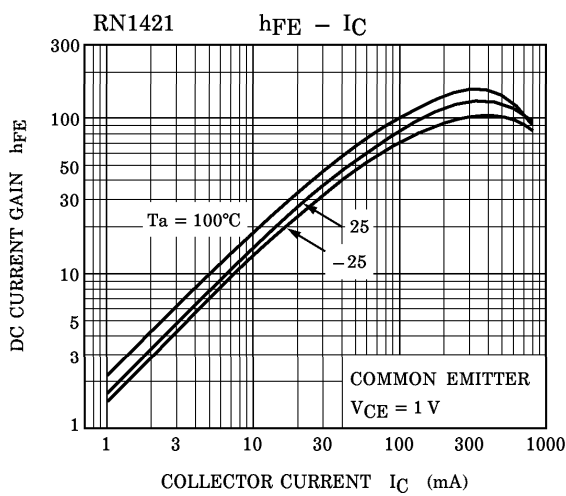
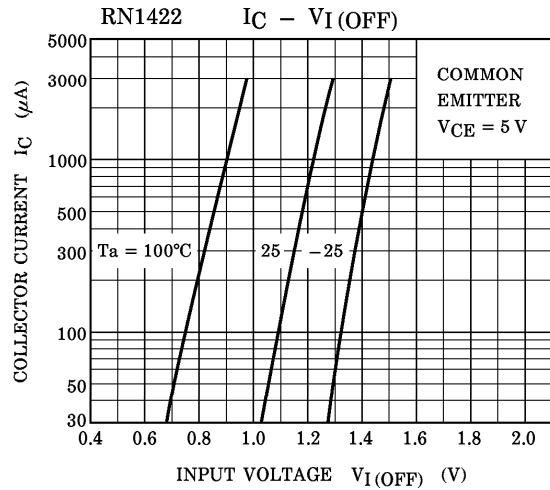
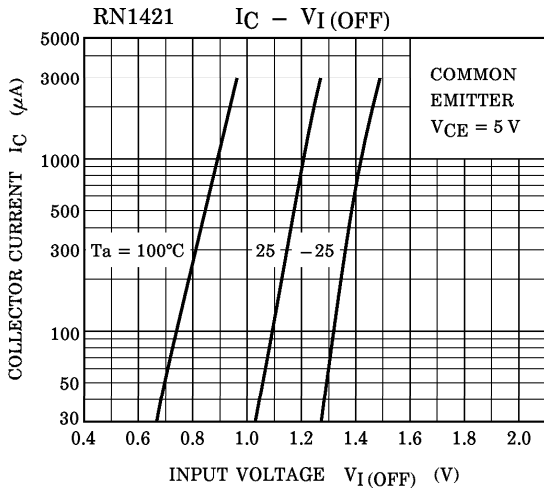
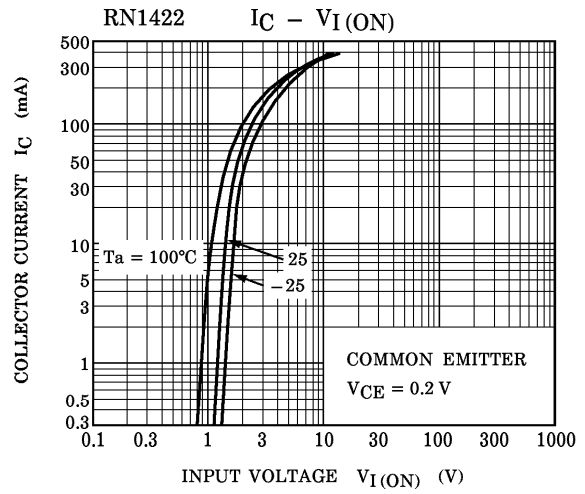
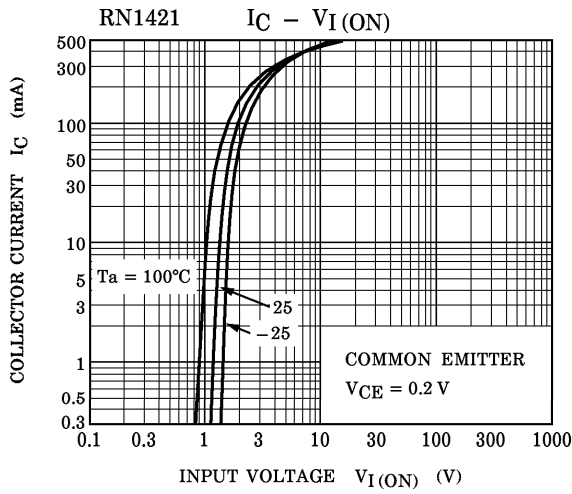
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN1421~1427	V_{CBO}	50	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage	RN1421~1424	V_{EBO}	10	V
	RN1425, 1426		5	
	RN1427		6	
Collector Current	RN1421~1427	I_C	800	mA
Collector Power Dissipation		P_C	200	mW
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55~150	$^\circ\text{C}$

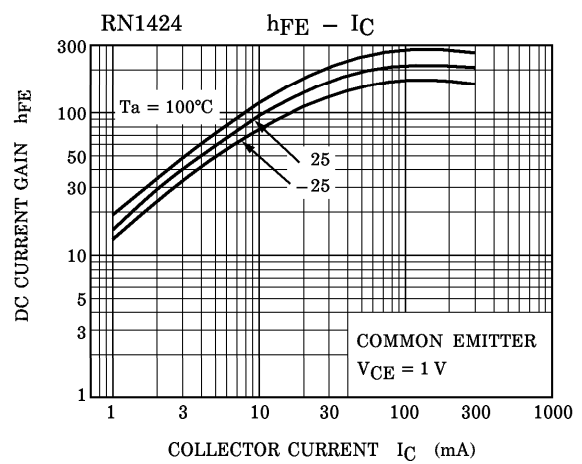
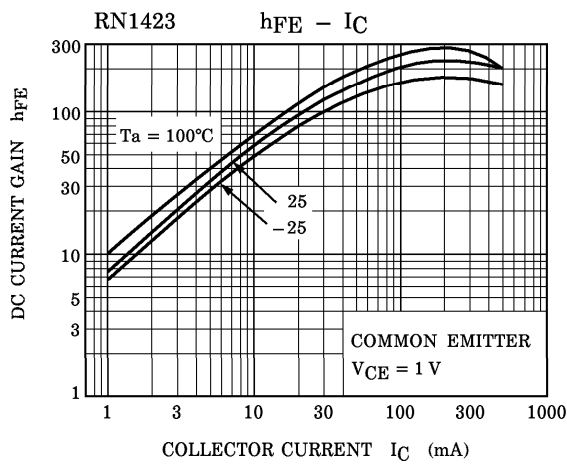
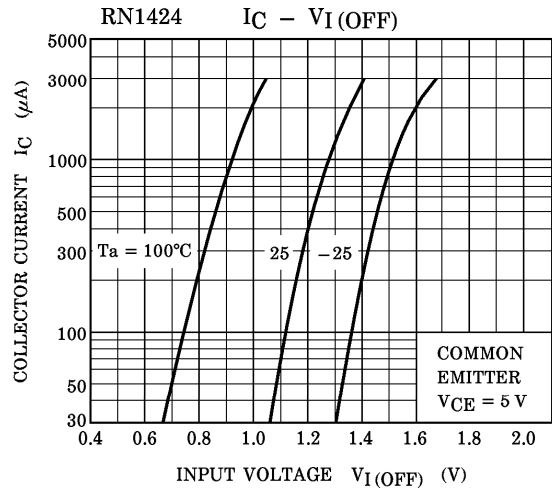
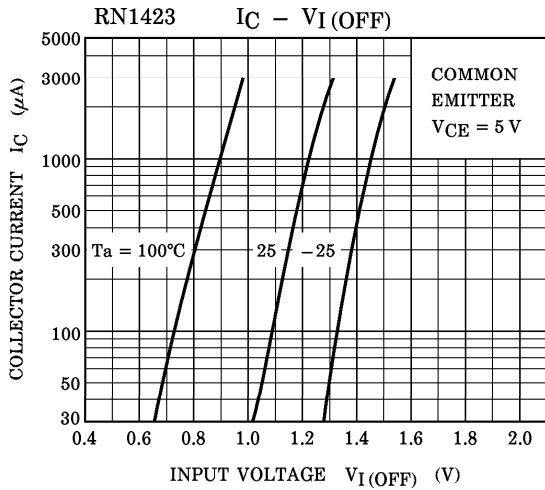
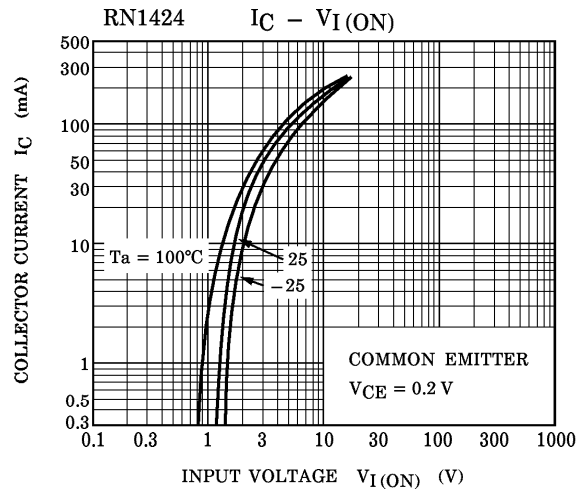
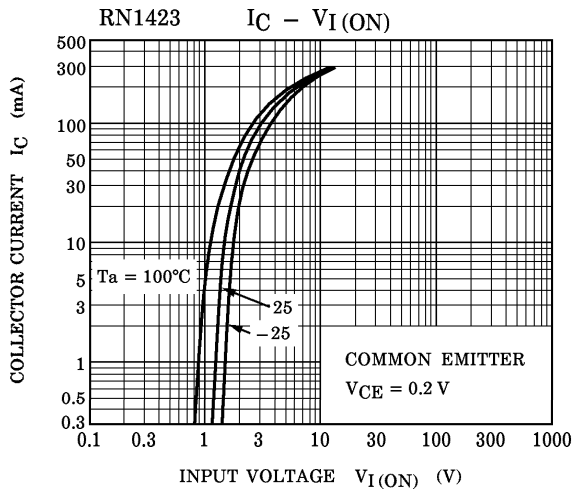
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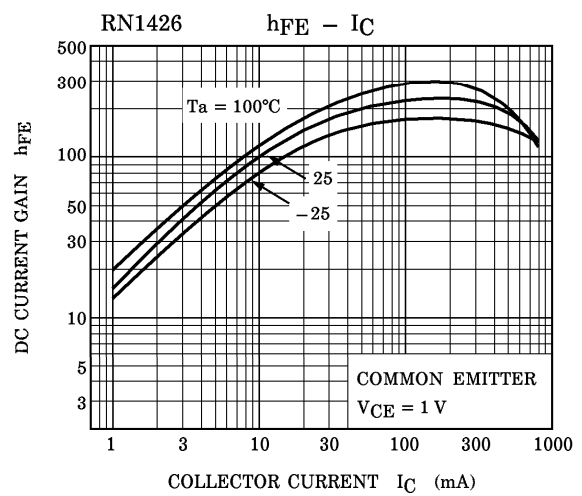
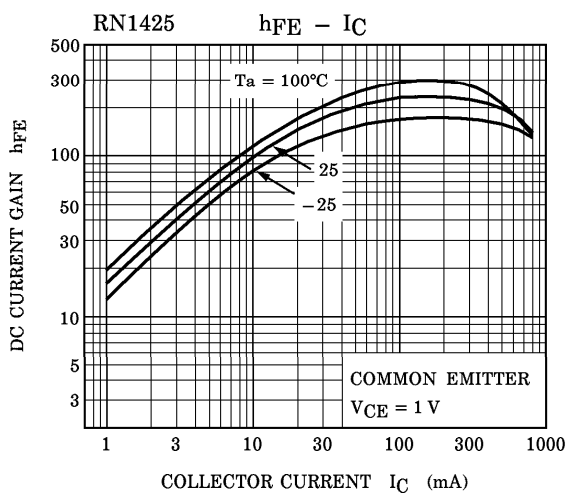
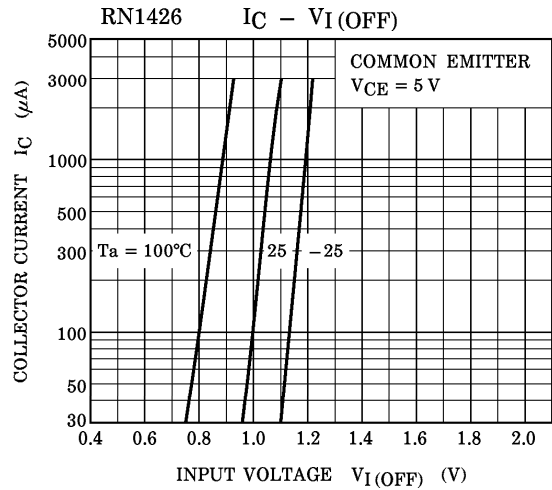
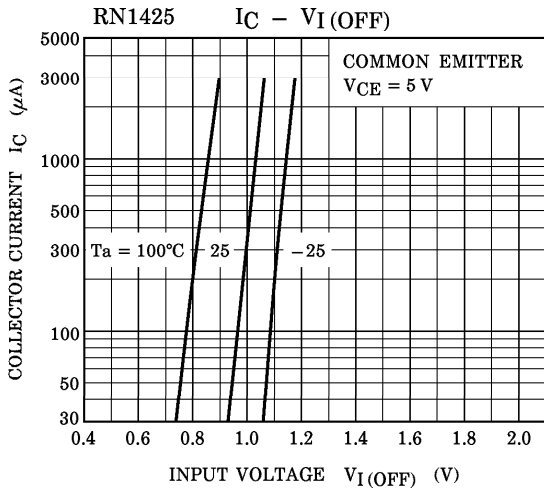
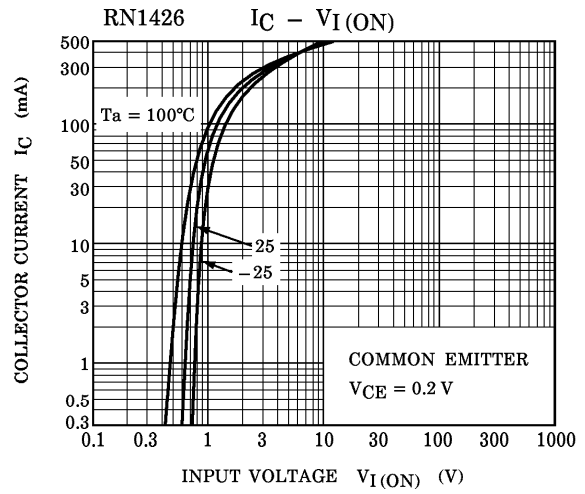
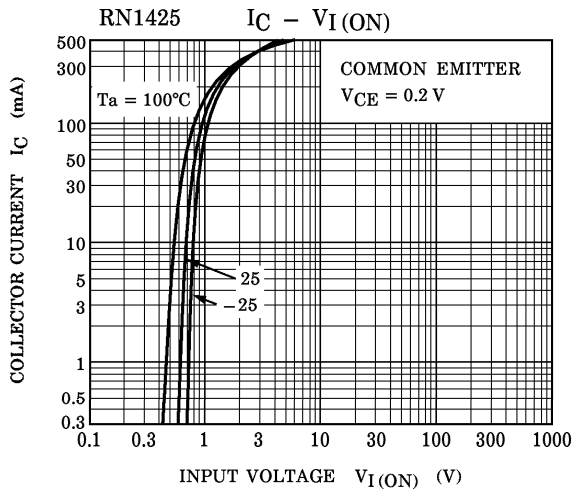
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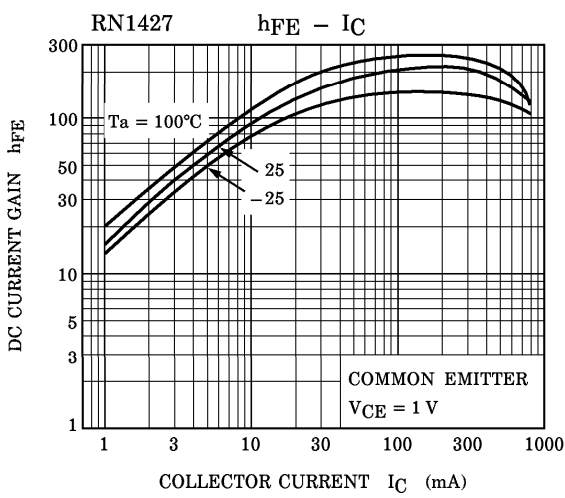
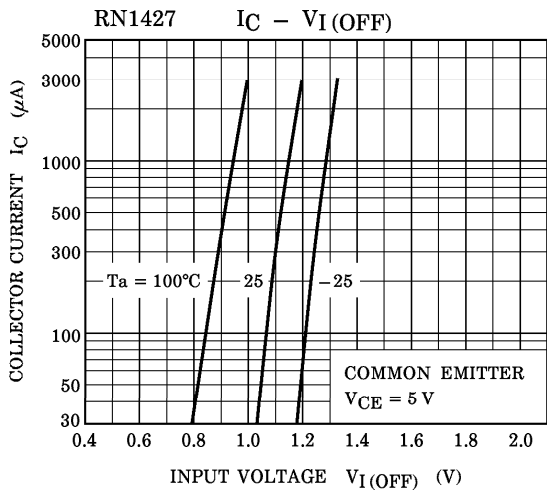
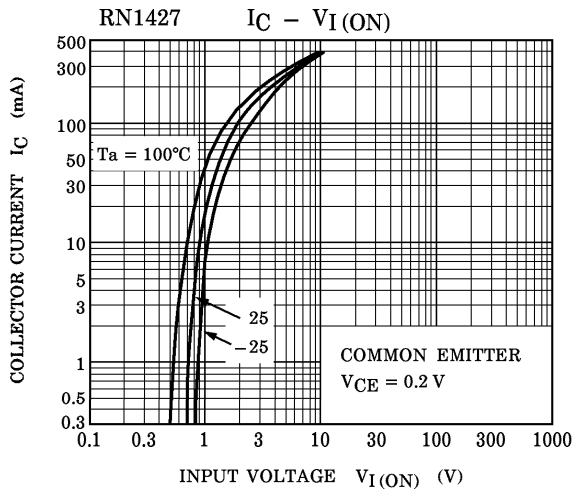
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

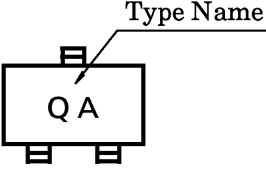
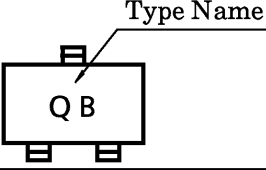
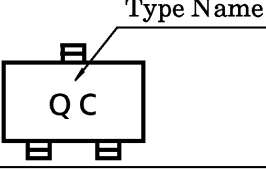
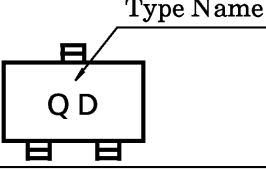
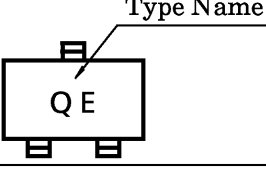
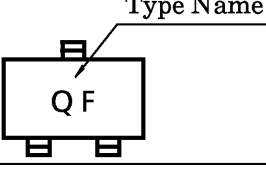
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN1421~1427	I_{CBO}	$V_{CB} = 50\text{ V}, I_E = 0$	—	—	100	nA
		I_{CEO}	$V_{CE} = 50\text{ V}, I_B = 0$	—	—	500	
Emitter Cut-off Current	RN1421	I_{EBO}	$V_{EB} = 10\text{ V}, I_E = 0$	3.85	—	7.14	mA
	RN1422			1.75	—	3.25	
	RN1423			0.82	—	1.52	
	RN1424		0.38	—	0.71		
	RN1425		$V_{EB} = 5\text{ V}, I_C = 0$	0.365	—	0.682	
	RN1426			0.35	—	0.65	
	RN1427		$V_{EB} = 6\text{ V}, I_C = 0$	0.378	—	0.703	
DC Current Gain	RN1421	h_{FE}	$V_{CE} = 1\text{ V}, I_C = 100\text{ mA}$	60	—	—	—
	RN1422			65	—	—	
	RN1423			70	—	—	
	RN1424			90	—	—	
	RN1425			90	—	—	
	RN1426			90	—	—	
	RN1427			90	—	—	
Collector-Emitter Saturation Voltage	RN1421	$V_{CE(sat)}$	$I_C = 50\text{ mA}, I_B = 2\text{ mA}$	—	—	0.25	V
	RN1422~1427		$I_C = 50\text{ mA}, I_B = 1\text{ mA}$				
Input Voltage (ON)	RN1421	$V_{I(ON)}$	$V_{CE} = 0.2\text{ V}, I_C = 100\text{ mA}$	1.0	—	3.5	V
	RN1422			1.4	—	4.5	
	RN1423			2.0	—	6.5	
	RN1424			3.0	—	12.0	
	RN1425			0.6	—	2.0	
	RN1426			0.7	—	2.5	
	RN1427			1.0	—	3.0	
Input Voltage (OFF)	RN1421~1424	$V_{I(OFF)}$	$V_{CE} = 5\text{ V}, I_C = 0.1\text{ mA}$	0.8	—	1.3	V
	RN1425, 1426			0.4	—	0.8	
	RN1427			0.5	—	1.0	
Transition Frequency	RN1421~1427	f_T	$V_{CE} = 5\text{ V}, I_C = 20\text{ mA}$	—	300	—	MHz
Collector Output Capacitance	RN1421~1427	C_{ob}	$V_{CB} = 10\text{ V}, I_E = 0$ $f = 1\text{ MHz}$	—	7	—	pF
Input Resistor	RN1421	R1		0.7	1.0	1.3	k Ω
	RN1422			1.54	2.2	2.86	
	RN1423			3.29	4.7	6.11	
	RN1424			7	10	13	
	RN1425			0.329	0.47	0.61	
	RN1426			0.7	1.0	1.3	
	RN1427			1.54	2.2	2.86	
Input Ratio	RN1421~1424	R1 / R2		0.9	1.0	1.1	—
	RN1425			0.0423	0.047	0.0517	
	RN1426			0.09	0.1	0.11	
	RN1427			0.2	0.22	0.24	









TYPE NAME	MARKING
RN1421	
RN1422	
RN1423	
RN1424	
RN1425	
RN1426	
RN1427	