

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

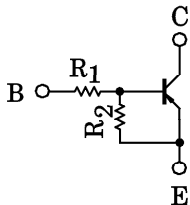
RN2114, RN2115, RN2116, RN2117, RN2118

SWITCHING, INVERTER CIRCUIT, INTERFACE CIRCUIT
AND DRIVER CIRCUIT APPLICATIONS.

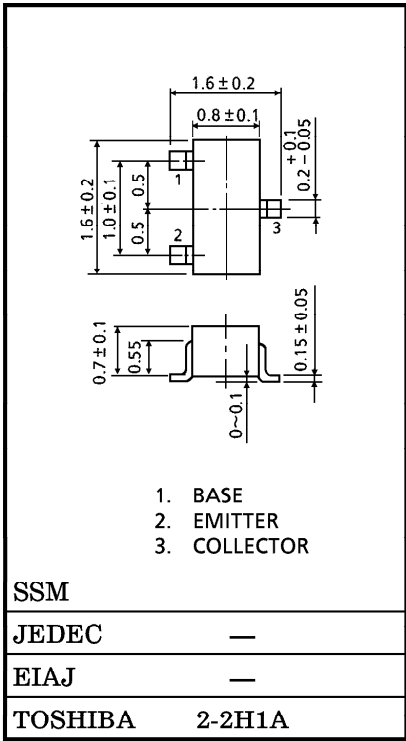
Unit in mm

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN1114~RN1118

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



TYPE No.	R ₁ (kΩ)	R ₂ (kΩ)
RN2114	1	10
RN2115	2.2	10
RN2116	4.7	10
RN2117	10	4.7
RN2118	47	10



Weight : 2.4mg

MAXIMUM RATINGS (Ta = 25°C)

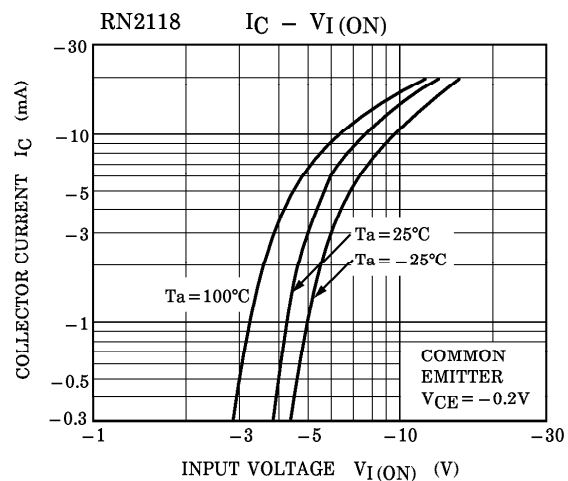
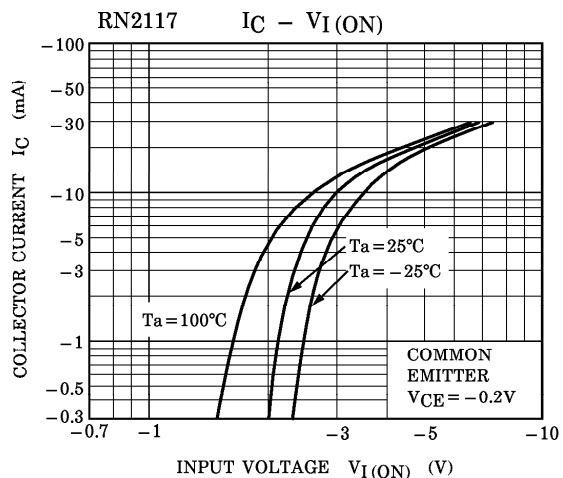
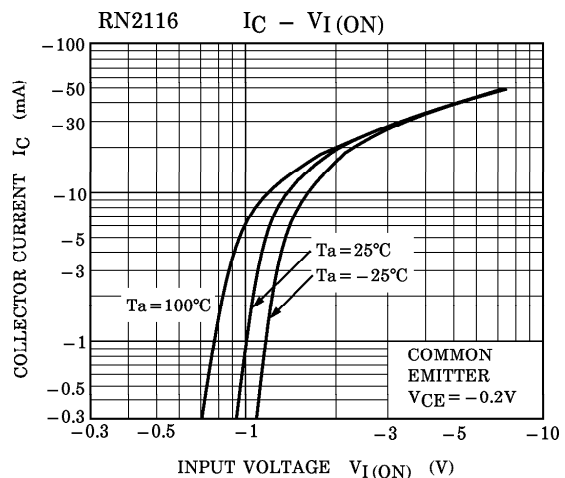
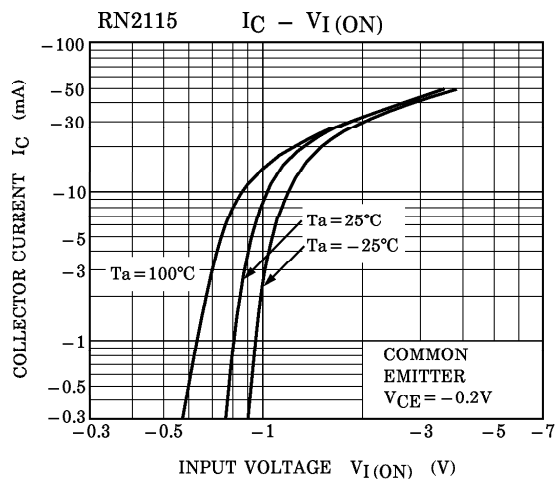
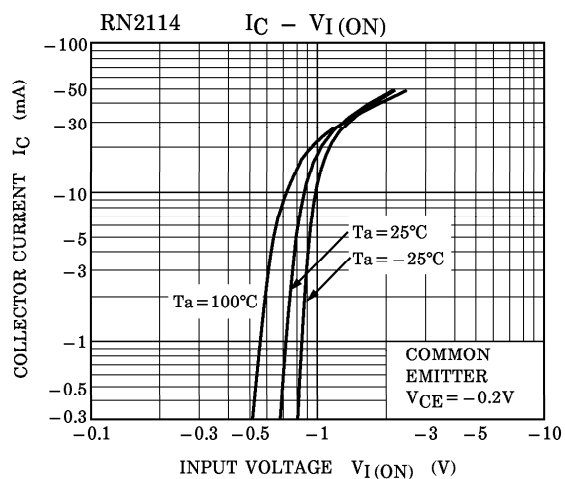
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN2114~2118	V _{CB0}	−50	V
Collector-Emitter Voltage		V _{CE0}	−50	V
Emitter-Base Voltage	RN2114	V _{EB0}	−5	V
	RN2115		−6	
	RN2116		−7	
	RN2117		−15	
	RN2118		−25	
Collector Current	RN2114~2118	I _C	−100	mA
Collector Power Dissipation		P _C	100	mW
Junction Temperature		T _j	150	°C
Storage Temperature Range		T _{stg}	−55~150	°C

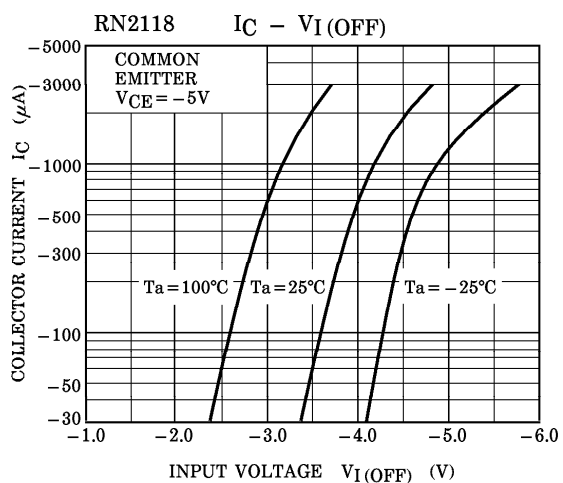
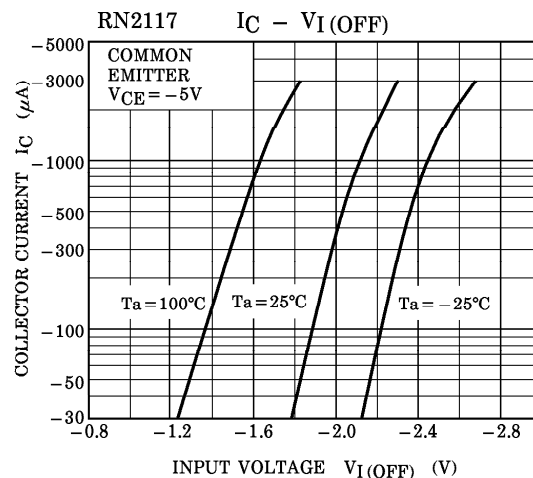
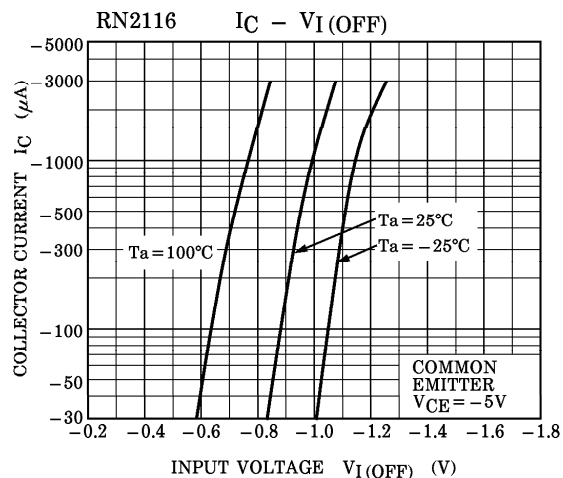
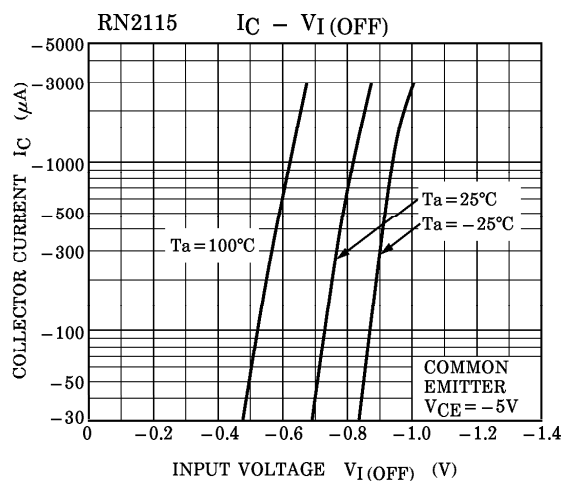
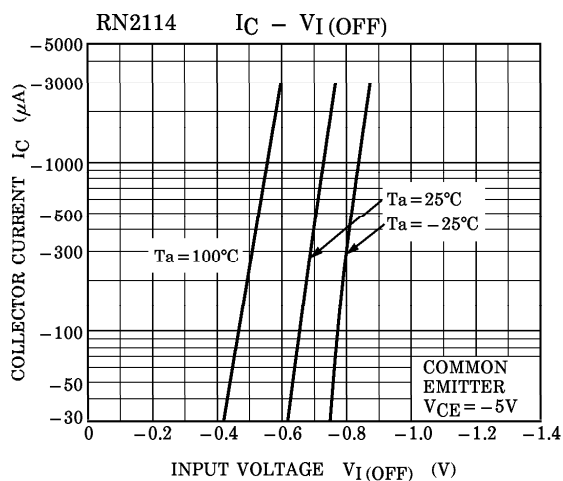
961001EAA2

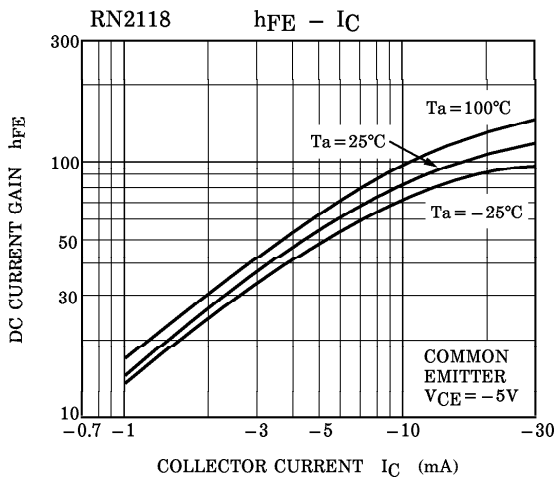
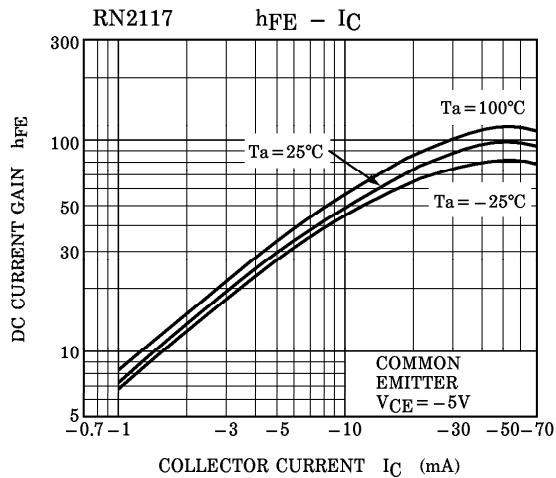
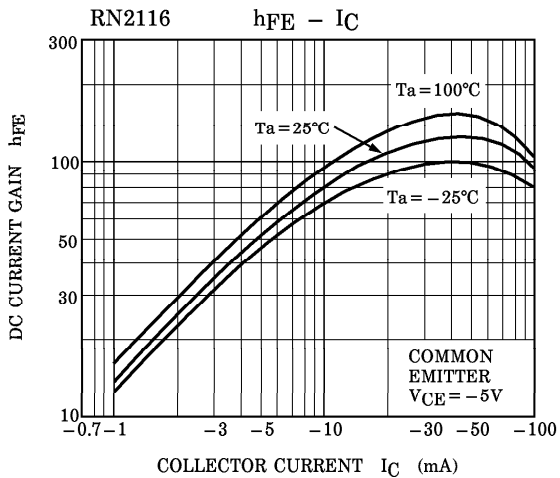
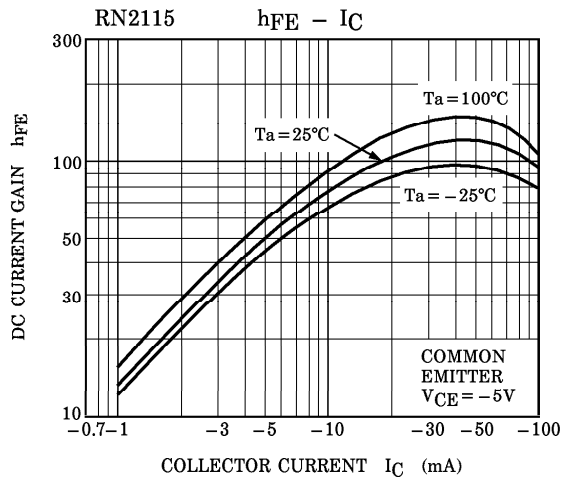
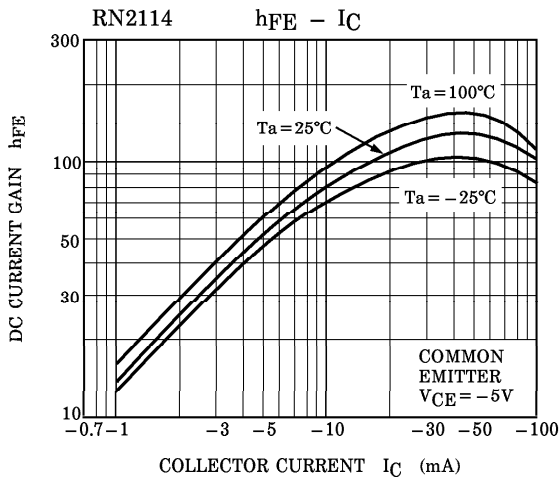
- TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

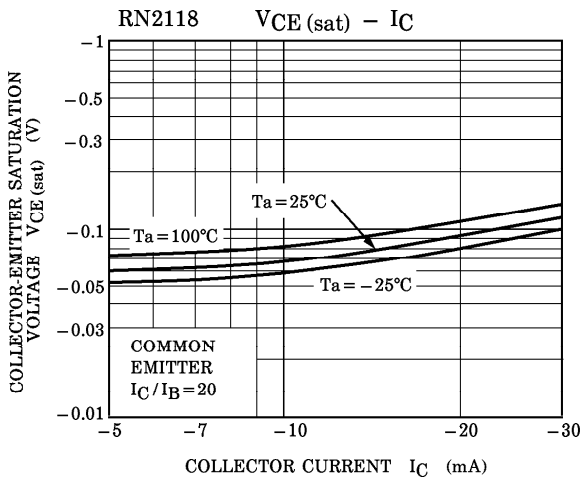
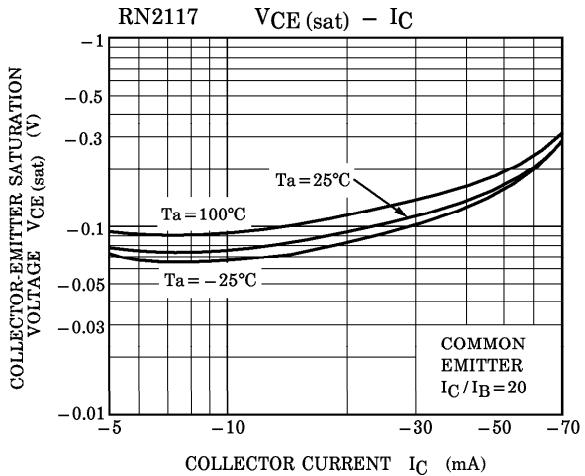
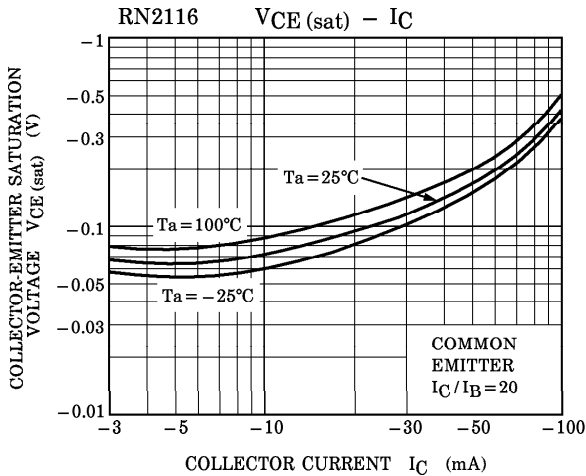
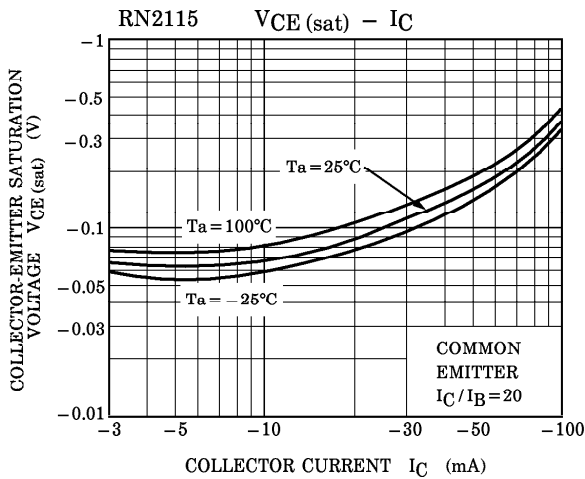
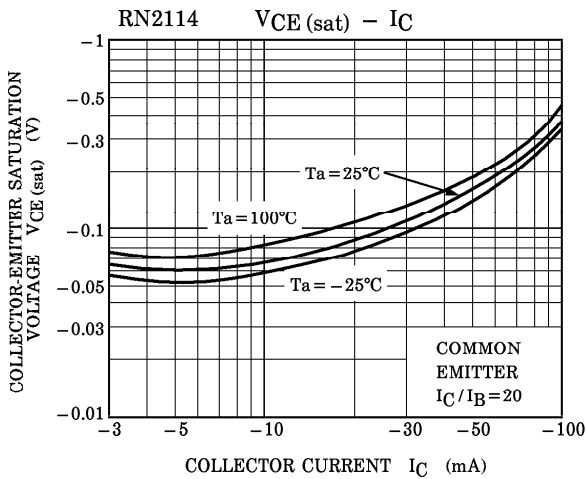
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

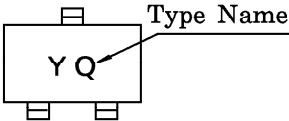
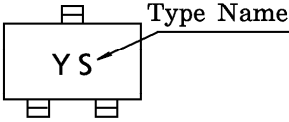
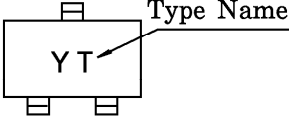
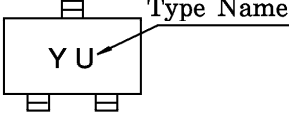
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN2114~2118	I_{CBO}	$V_{CB} = -50V, I_E = 0$	—	—	-100	nA
	RN2114~2118	I_{CEO}	$V_{CE} = -50V, I_B = 0$	—	—	-500	nA
Emitter Cut-off Current	RN2114	I_{EBO}	$V_{EB} = -5V, I_C = 0$	-0.35	—	-0.65	mA
	RN2115		$V_{EB} = -6V, I_C = 0$	-0.37	—	-0.71	
	RN2116		$V_{EB} = -7V, I_C = 0$	-0.36	—	-0.68	
	RN2117		$V_{EB} = -15V, I_C = 0$	-0.78	—	-1.46	
	RN2118		$V_{EB} = -25V, I_C = 0$	-0.33	—	-0.63	
DC Current Gain	RN2114~16, 18	h_{FE}	$V_{CE} = -5V, I_C = -10mA$	50	—	—	
	RN2117			30	—	—	
Collector-Emitter Saturation Voltage	RN2114~2118	$V_{CE(sat)}$	$I_C = -5mA, I_B = -0.25mA$	—	-0.1	-0.3	V
Input Voltage (ON)	RN2114	$V_{I(ON)}$	$V_{CE} = -0.2V, I_C = -5mA$	-0.5	—	-2.0	V
	RN2115			-0.6	—	-2.5	
	RN2116			-0.7	—	-2.5	
	RN2117			-1.5	—	-3.5	
	RN2118			-2.5	—	-10.0	
Input Voltage (OFF)	RN2114	$V_{I(OFF)}$	$V_{CE} = -5V, I_C = -0.1mA$	-0.3	—	-0.9	V
	RN2115			-0.3	—	-1.0	
	RN2116			-0.3	—	-1.1	
	RN2117			-0.3	—	-3.0	
	RN2118			-0.5	—	-5.7	
Transition Frequency	RN2114~2118	f_T	$V_{CE} = -10V, I_C = -5mA$	—	200	—	MHz
Collector Output Capacitance	RN2114~2118	C_{ob}	$V_{CB} = -10V, I_E = 0, f = 1MHz$	—	3.0	6.0	pF
Input Resistor	RN2114	R_1	—	0.7	1.0	1.3	kΩ
	RN2115			1.54	2.2	2.86	
	RN2116			3.29	4.7	6.11	
	RN2117			7.0	10.0	13.0	
	RN2118			32.9	47.0	61.1	
Resistor Ratio	RN2114	R_1 / R_2	—	—	0.1	—	
	RN2115			—	0.22	—	
	RN2116			—	0.47	—	
	RN2117			—	2.13	—	
	RN2118			—	4.7	—	









TYPE NAME	MARKING
RN2114	
RN2115	
RN2116	
RN2117	
RN2118	