

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

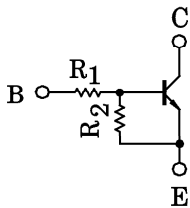
RN1114, RN1115, RN1116, RN1117, RN1118

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

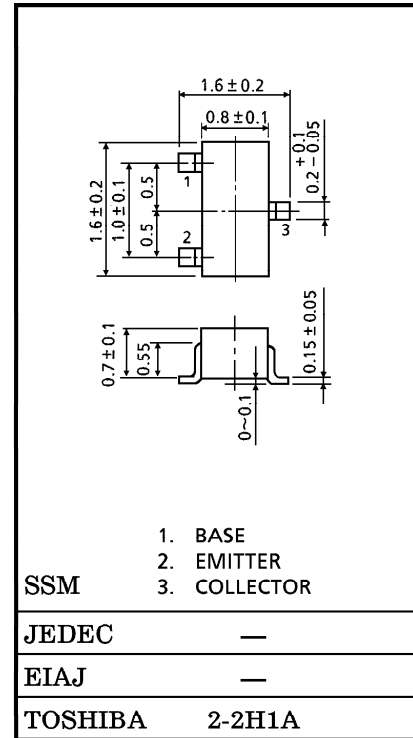
Unit in mm

- With Built-in Bias Resistors
- Simplify Circuit Design
- Reduce a Quantity of Parts and Manufacturing Process
- Complementary to RN2114~RN2118

EQUIVALENT CIRCUIT AND BIAS RESISTOR VALUES



TYPE No.	R ₁ (kΩ)	R ₂ (kΩ)
RN1114	1	10
RN1115	2.2	10
RN1116	4.7	10
RN1117	10	4.7
RN1118	47	10



Weight : 2.4mg

MAXIMUM RATINGS (Ta = 25°C)

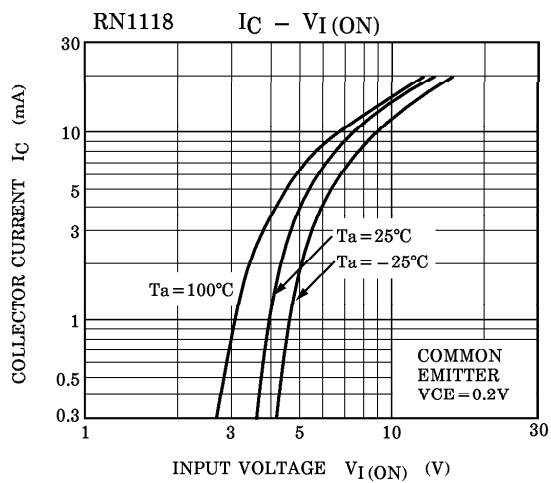
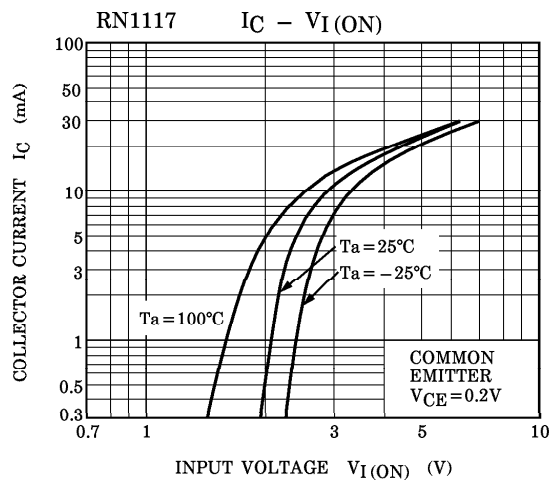
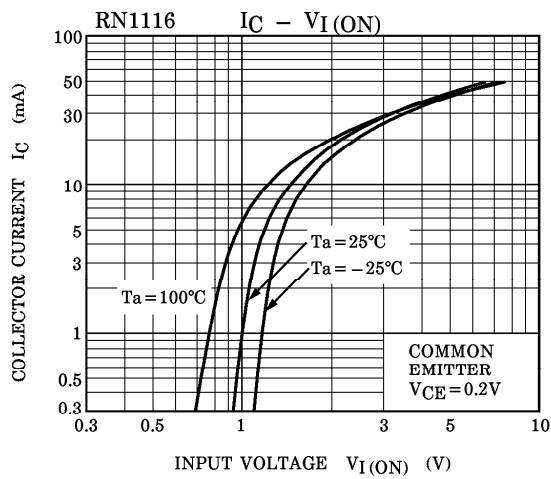
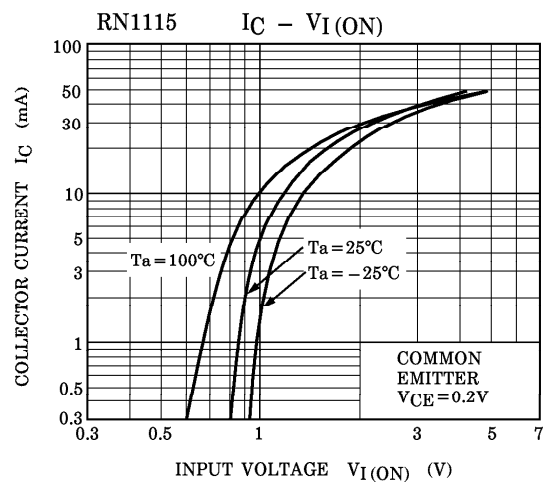
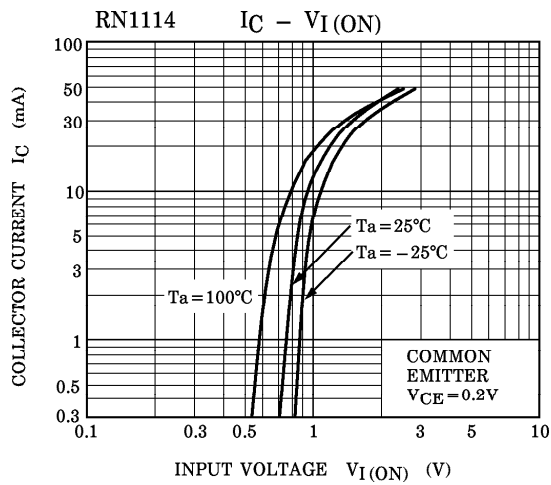
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage	RN1114~1118	V _{CB0}	50	V
Collector-Emitter Voltage		V _{CE0}	50	V
Emitter-Base Voltage	RN1114	V _{EBO}	5	V
	RN1115		6	
	RN1116		7	
	RN1117		15	
	RN1118		25	
Collector Current	RN1114~1118	I _C	100	mA
Collector Power Dissipation		P _C	100	mW
Junction Temperature		T _j	150	°C
Storage Temperature Range		T _{stg}	-55~150	°C

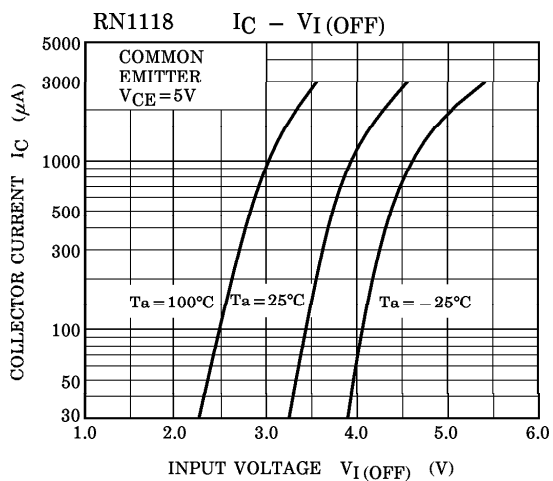
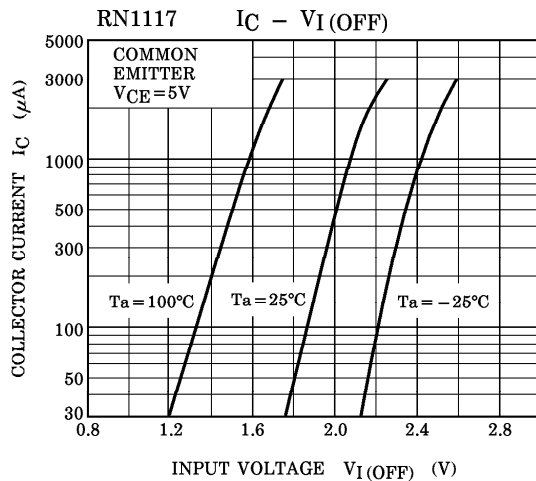
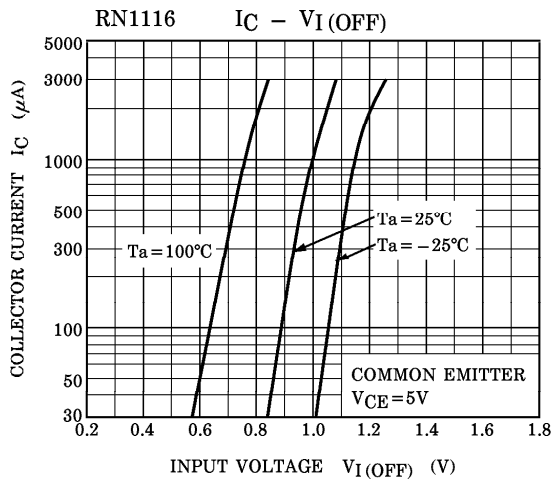
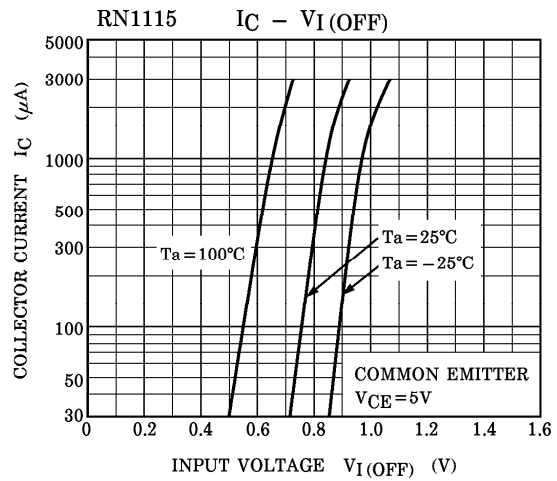
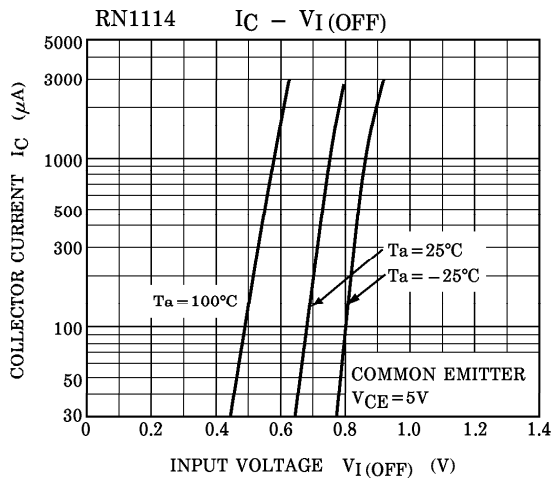
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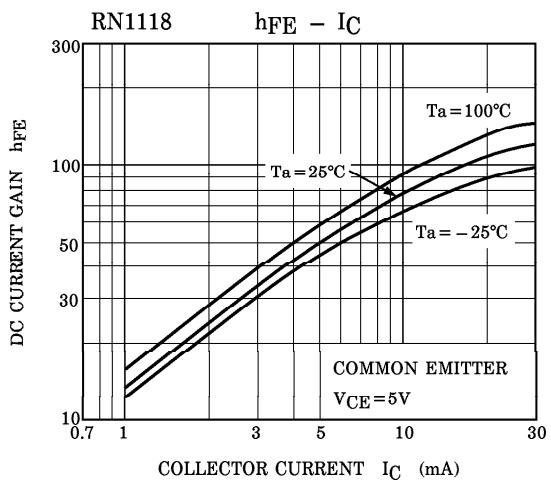
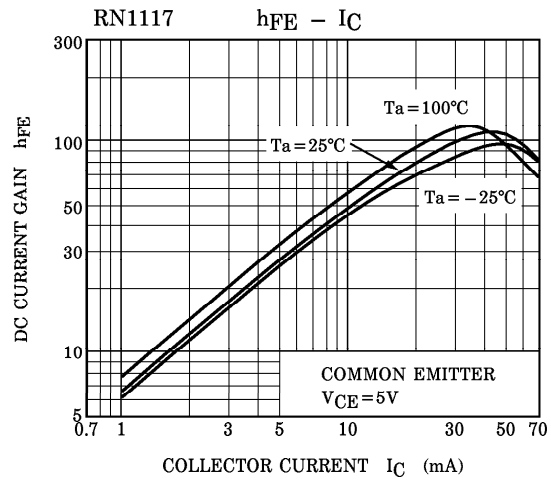
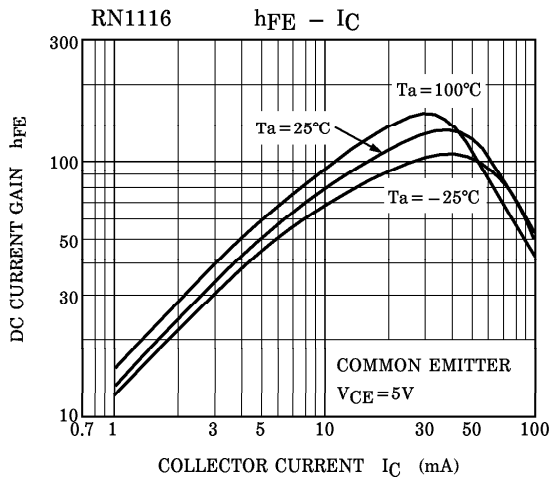
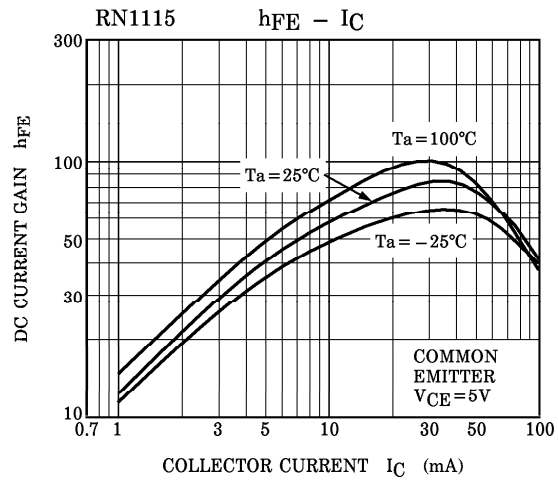
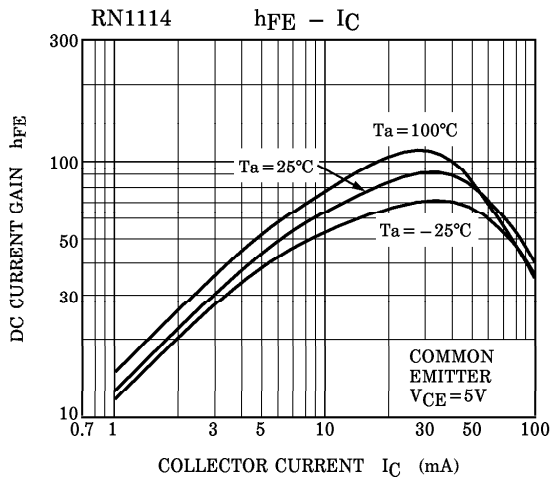
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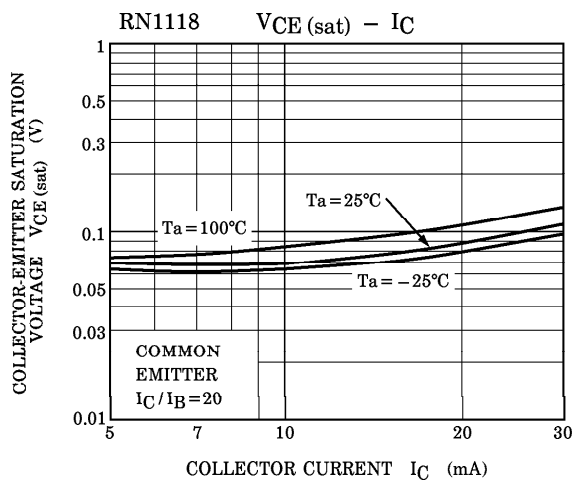
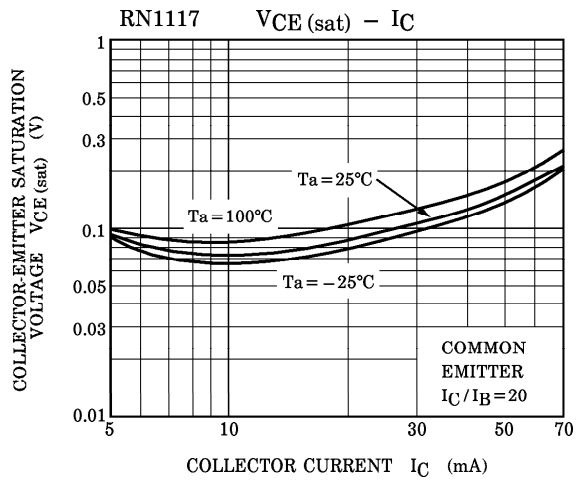
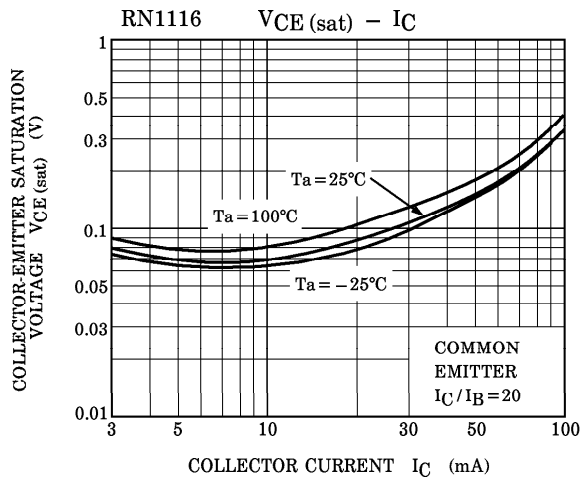
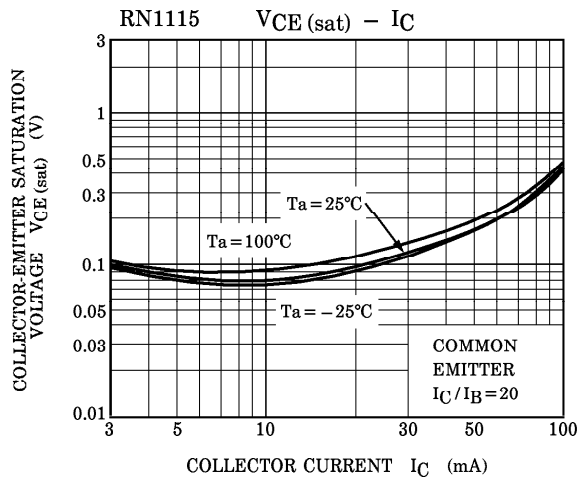
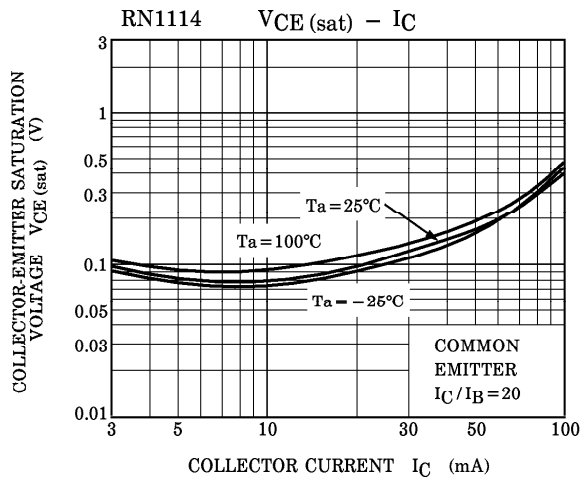
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

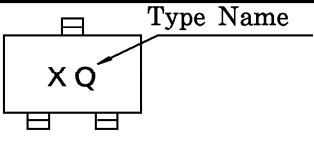
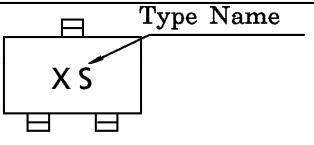
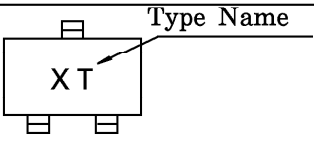
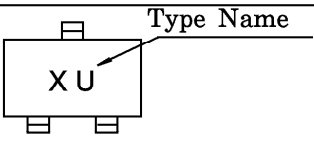
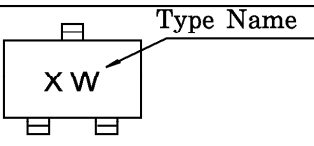
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	RN1114~1118	I_{CBO}	$V_{CB}=50V, I_E=0$	—	—	100	nA
	RN1114~1118	I_{CEO}	$V_{CE}=50V, I_B=0$	—	—	500	nA
Emitter Cut-off Current	RN1114	I_{EBO}	$V_{EB}=5V, I_C=0$	0.35	—	0.65	mA
	RN1115		$V_{EB}=6V, I_C=0$	0.37	—	0.71	
	RN1116		$V_{EB}=7V, I_C=0$	0.36	—	0.68	
	RN1117		$V_{EB}=15V, I_C=0$	0.78	—	1.46	
	RN1118		$V_{EB}=25V, I_C=0$	0.33	—	0.63	
DC Current Gain	RN1114~16, 18	h_{FE}	$V_{CE}=5V, I_C=10mA$	50	—	—	
	RN1117			30	—	—	
Collector-Emitter Saturation Voltage	RN1114~1118	$V_{CE(sat)}$	$I_C=5mA, I_B=0.25mA$	—	0.1	0.3	V
Input Voltage (ON)	RN1114	$V_{I(ON)}$	$V_{CE}=0.2V, I_C=5mA$	0.6	—	2.0	V
	RN1115			0.7	—	2.5	
	RN1116			0.8	—	2.5	
	RN1117			1.5	—	3.5	
	RN1118			2.5	—	10.0	
Input Voltage (OFF)	RN1114	$V_{I(OFF)}$	$V_{CE}=5V, I_C=0.1mA$	0.3	—	0.9	V
	RN1115			0.3	—	1.0	
	RN1116			0.3	—	1.1	
	RN1117			0.3	—	2.3	
	RN1118			0.5	—	5.7	
Transition Frequency	RN1114~1118	f_T	$V_{CE}=10V, I_C=5mA$	—	250	—	MHz
Collector Output Capacitance	RN1114~1118	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	—	3.0	6.0	pF
Input Resistor	RN1114	R_1	—	0.7	1.0	1.3	k Ω
	RN1115			1.54	2.2	2.86	
	RN1116			3.29	4.7	6.11	
	RN1117			7.0	10.0	13.0	
	RN1118			32.9	47.0	61.1	
Resistor Ratio	RN1114	R_1/R_2	—	—	0.1	—	
	RN1115			—	0.22	—	
	RN1116			—	0.47	—	
	RN1117			—	2.13	—	
	RN1118			—	4.7	—	









TYPE NAME	MARKING
RN1114	 <p>The diagram shows a rectangular component with four small square mounting tabs. The marking 'XQ' is printed in the center. An arrow points from the 'Q' to a label 'Type Name' located above the component.</p>
RN1115	 <p>The diagram shows a rectangular component with four small square mounting tabs. The marking 'XS' is printed in the center. An arrow points from the 'S' to a label 'Type Name' located above the component.</p>
RN1116	 <p>The diagram shows a rectangular component with four small square mounting tabs. The marking 'XT' is printed in the center. An arrow points from the 'T' to a label 'Type Name' located above the component.</p>
RN1117	 <p>The diagram shows a rectangular component with four small square mounting tabs. The marking 'XU' is printed in the center. An arrow points from the 'U' to a label 'Type Name' located above the component.</p>
RN1118	 <p>The diagram shows a rectangular component with four small square mounting tabs. The marking 'XW' is printed in the center. An arrow points from the 'W' to a label 'Type Name' located above the component.</p>