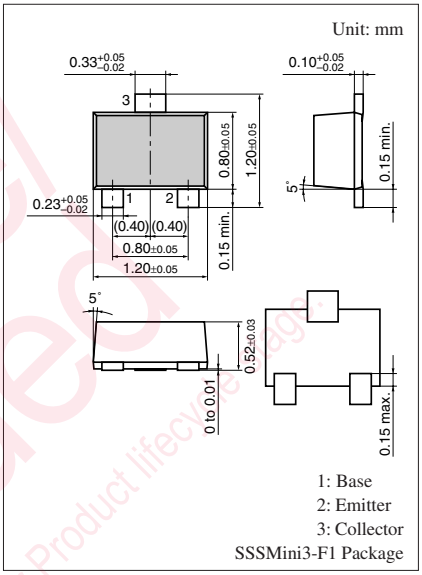
UNR3113, UNR311A, UNR311T

Silicon PNP epitaxial planar transistor

For digital circuits



■ Features

- Optimum for downsizing of the equipment and high-density mounting
- Contribute for low power consumption

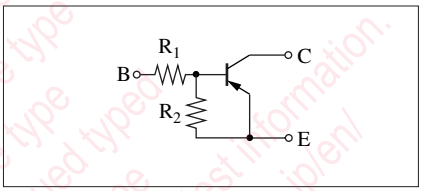
■ Resistance by Part Number

	Marking symbol	(R_1)	(R_2)
• UNR3113	6C	47 kΩ	47 kΩ
• UNR311A	6X	100 kΩ	100 kΩ
• UNR311T	EY	22 kΩ	47 kΩ

■ Absolute Maximum Ratings $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector to base voltage	V_{CBO}	−50	V
Collector to emitter voltage	V_{CEO}	−50	V
Collector current	I_C	−100	mA
Total power dissipation	P_T	100	mW
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	−55 to +125	°C

Internal Connection



■ Electrical Characteristics $T_a = 25°C \pm 3°C$

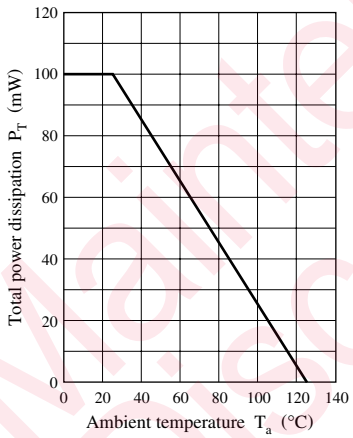
Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Collector to base voltage		V_{CBO}	$I_C = -10$ µA, $I_E = 0$	−50			V
Collector to emitter voltage		V_{CEO}	$I_C = -2$ mA, $I_B = 0$	−50			V
Collector cutoff current		I_{CBO}	$V_{CB} = -50$ V, $I_E = 0$			− 0.1	µA
		I_{CEO}	$V_{CE} = -50$ V, $I_B = 0$			− 0.5	
Emitter cutoff current	UNR3113, 311A	I_{EBO}	$V_{EB} = -6$ V, $I_C = 0$			− 0.1	mA
	UNR311T					− 0.2	
Forward current transfer ratio	UNR3113, 311A	h_{FE}	$V_{CE} = -10$ V, $I_C = -5$ mA	80			
	UNR311T			80		400	
Collector to emitter saturation voltage		$V_{CE(sat)}$	$I_C = -10$ mA, $I_B = -0.3$ mA			− 0.25	V
High-level output voltage		V_{OH}	$V_{CC} = -5$ V, $V_B = -0.5$ V, $R_L = 1$ kΩ	−4.9			V
Low-level output voltage	UNR3113	V_{OL}	$V_{CC} = -5$ V, $V_B = -3.5$ V, $R_L = 1$ kΩ			− 0.2	V
	UNR311A		$V_{CC} = -5$ V, $V_B = -5.0$ V, $R_L = 1$ kΩ				
	UNR311T		$V_{CC} = -5$ V, $V_B = -2.5$ V, $R_L = 1$ kΩ				

■ Electrical Characteristics (continued) $T_a = 25°C \pm 3°C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Input resistance	UNR3113	R_1		−30%	47	+30%	kΩ
	UNR311A				100		
	UNR311T				22		
Resistance ratio	UNR3113	R_1 / R_2		0.8	1.0	1.2	
	UNR311A				1.0		
	UNR311T			0.37	0.47	0.57	
Gain bandwidth product		f_T	$V_{CB} = -10$ V, $I_E = 1$ mA, f = 200 MHz		80		MHz

Common characteristics chart

P_T — T_a



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