

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

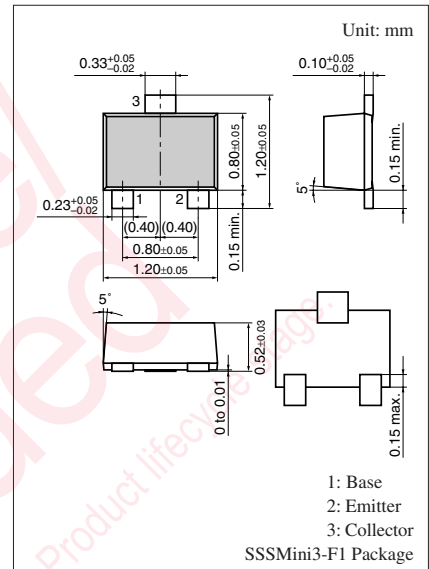
	Marking symbol	(R ₁)	(R ₂)
• UNR3113	6C	47 kΩ	47 kΩ
• UNR311A	6X	100 kΩ	100 kΩ
• UNR311T	EY	22 kΩ	47 kΩ

■ Absolute Maximum Ratings T_a = 25°C

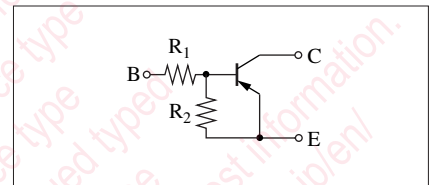
Parameter	Symbol	Rating	Unit
Collector to base voltage	V _{CBO}	-50	V
Collector to emitter voltage	V _{CEO}	-50	V
Collector current	I _C	-100	mA
Total power dissipation	P _T	100	mW
Junction temperature	T _j	125	°C
Storage temperature	T _{stg}	-55 to +125	°C

■ Electrical Characteristics T_a = 25°C ± 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				



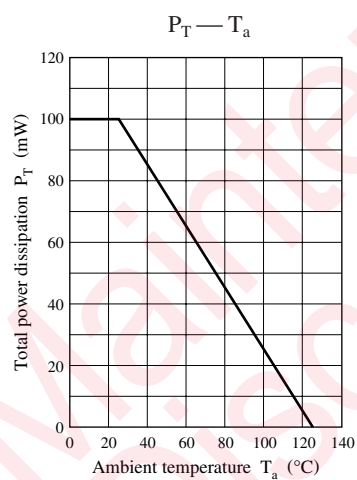
Internal Connection



■ Electrical Characteristics (continued) $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

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

Common characteristics chart



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