

PU3113, PU4113, PU4413

Silicon NPN Epitaxial Planar Type

Power Amplifier, Switching

Complementary Pair with PU3213, PU4213, PU4513

Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- PU3113: 3 NPN elements
- PU4113: 4 NPN elements
- PU4413: 2 NPN elements $\times$ 2 (4 elements in total)

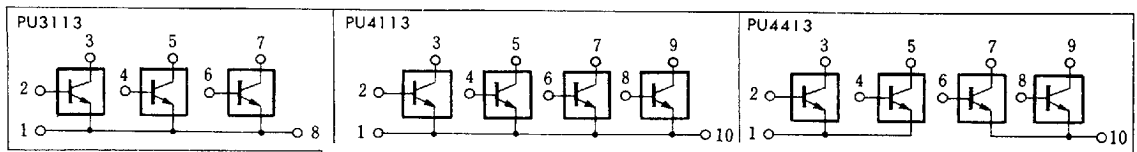
Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	130	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EB0}	7	V
Peak collector current	I_{CP}	8	A
Collector current	I_C	4	A
Power dissipation	P_D	15	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=100\text{V}$, $I_E=0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=5\text{V}$, $I_C=0$			50	μA
Collector-emitter voltage	V_{CEO}	$I_C=10\text{mA}$, $I_B=0$	80			V
DC current gain	h_{FE1}	$V_{CE}=2\text{V}$, $I_C=0.1\text{A}$	45			
	h_{FE2}	$V_{CE}=2\text{V}$, $I_C=1\text{A}$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{A}$, $I_B=0.15\text{A}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=3\text{A}$, $I_B=0.15\text{A}$			1.5	V
Transition frequency	f_T	$V_{CE}=10\text{V}$, $I_C=0.5\text{A}$, $f=10\text{MHz}$		30		MHz
Turn-on time	t_{on}	$I_C=1\text{A}$, $I_{B1}=0.1\text{A}$, $I_{B2}=-0.1\text{A}$		0.5		μs
Storage time	t_{stg}			2.5		μs
Fall time	t_f			0.15		μs

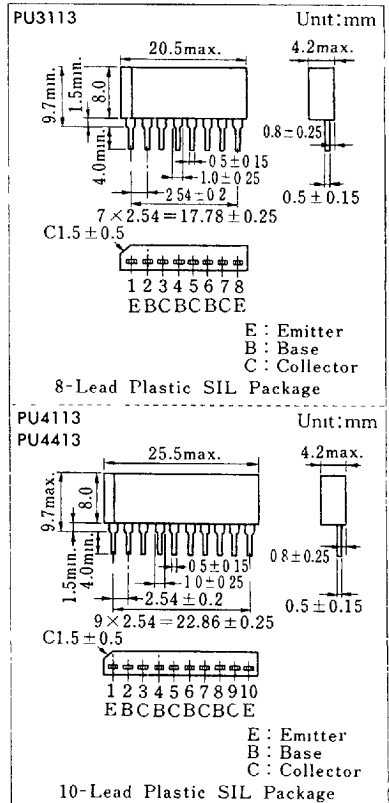
Inner Circuit

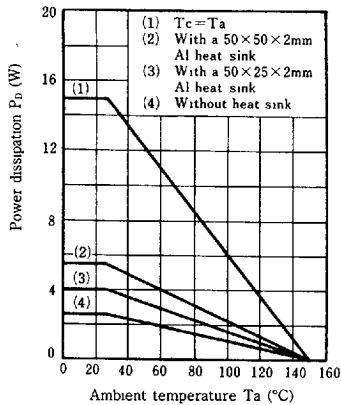
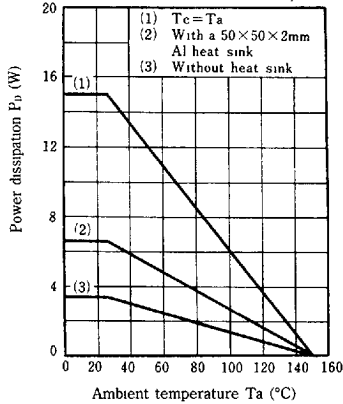
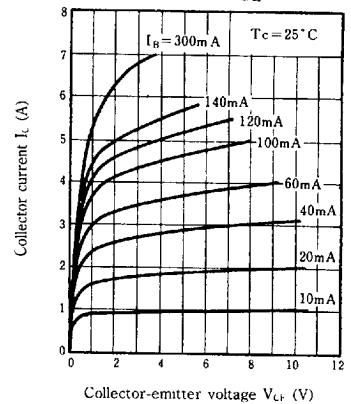
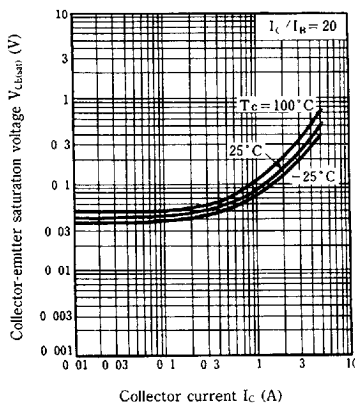
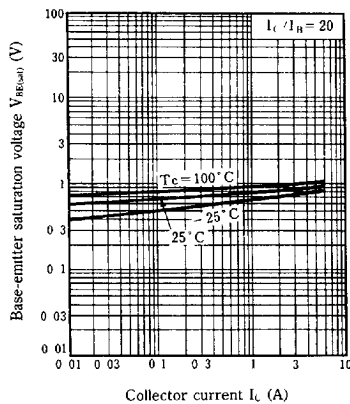
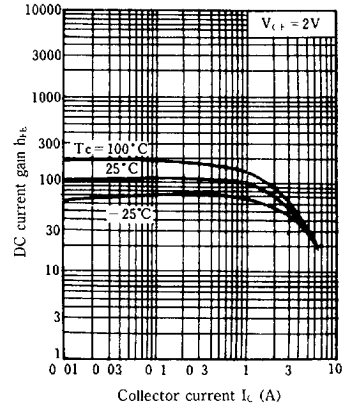
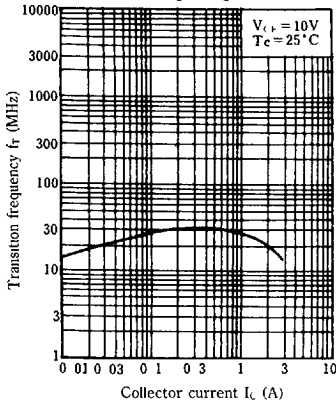
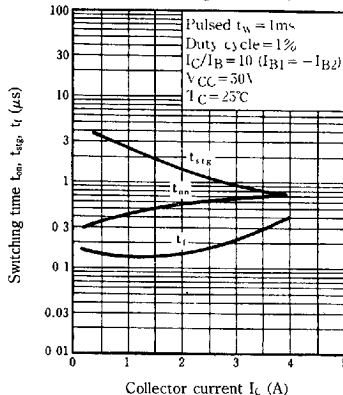


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Panasonic

Package Dimensions



$P_D - T_a$ (PU3113) $P_D - T_a$ (PU4113, PU4413) $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_C$  $t_{on}, t_{stg}, t_f - I_C$ 

Area of safe operation (ASO)

