

PU3112, PU4112, PU4412

Package Dimensions

Silicon NPN Epitaxial Planar Type

Power Amplifier, Switching

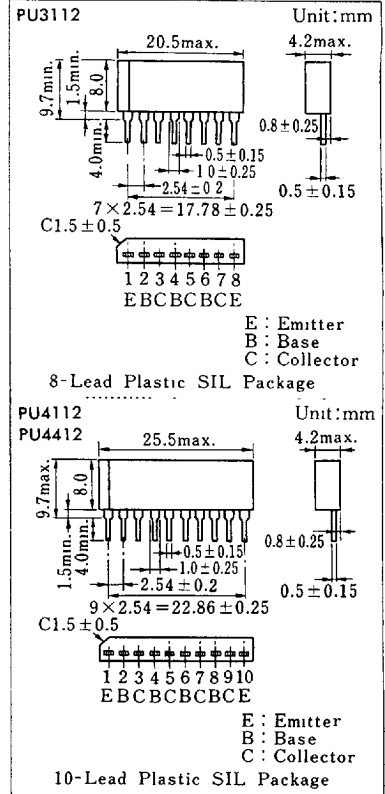
Complementary Pair with PU3212, PU4212, PU4512

Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- PU3112: 3 NPN elements
- PU4112: 4 NPN elements
- PU4412: 2 NPN elements \times 2 (4 elements in total)

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

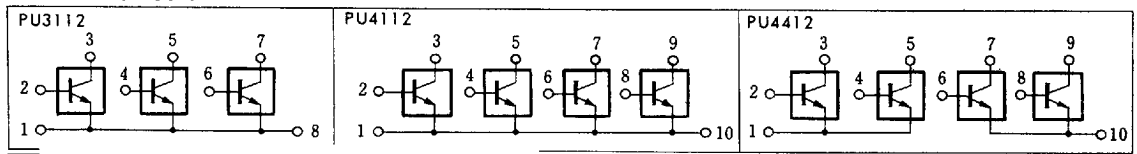
Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	130	V
Collector-emitter voltage	V_{CEO}	80	V
Emitter-base voltage	V_{EBO}	7	V
Peak collector current	I_{CP}	6	A
Collector current	I_C	3	A
Power dissipation	P_D	15	W
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ C$



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

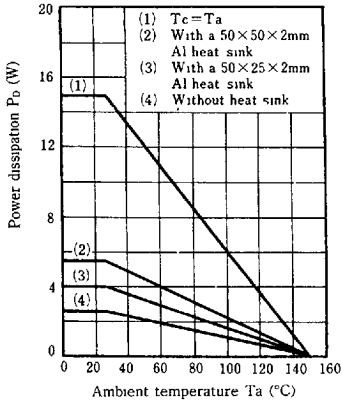
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=100V, I_E=0$			10	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=5V, I_C=0$			50	μA
Collector-emitter voltage	V_{CEO}	$I_C=10mA, I_B=0$	80			V
DC current gain	h_{FE1}	$V_{CE}=2V, I_C=0.1A$	45			
	h_{FE2}	$V_{CE}=2V, I_C=0.5A$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

Inner Circuit

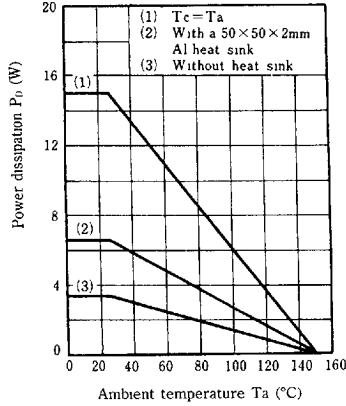


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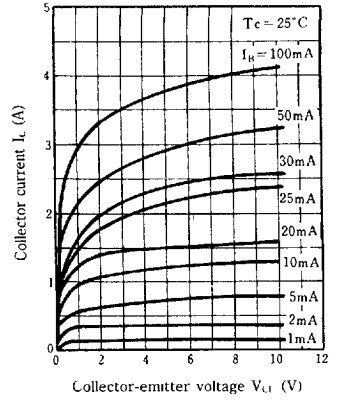
$P_D - T_a$ (PU3112)



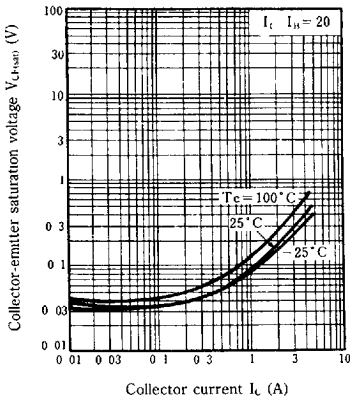
$P_D - T_a$ (PU4112, PU4412)



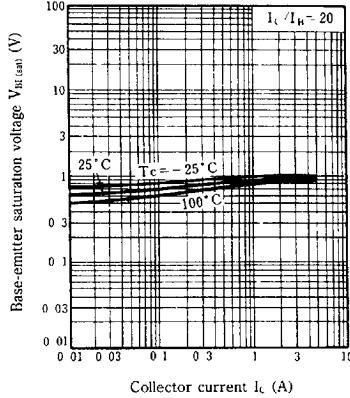
$I_C - V_{CE}$



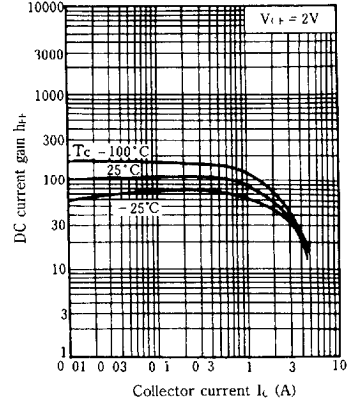
$V_{CE(sat)} - I_C$



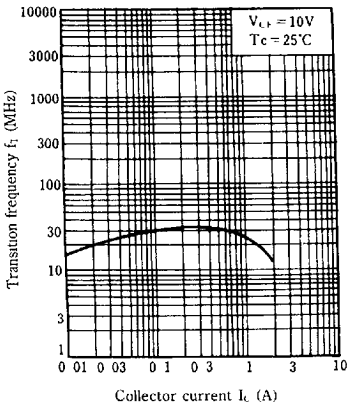
$V_{BE(sat)} - I_C$



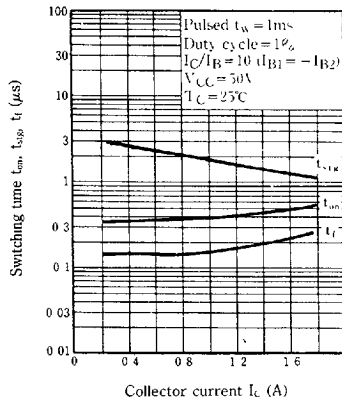
$h_{FE} - I_C$



$f_T - I_C$



$t_{on}, t_{stg}, t_f - I_C$



Area of safe operation (ASO)

