

PU3116, PU4116, PU4416 ■ Package Dimensions

Silicon NPN Epitaxial Planar Type

Power Amplifier, Switching
Complementary Pair with PU3216, PU4216, PU4516

■ Features

- High DC current gain (h_{FE}) and good linearity
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- PU3116: 3 NPN elements
- PU4116: 4 NPN elements
- PU4116: 2 NPN elements \times 2 (4 elements in total)

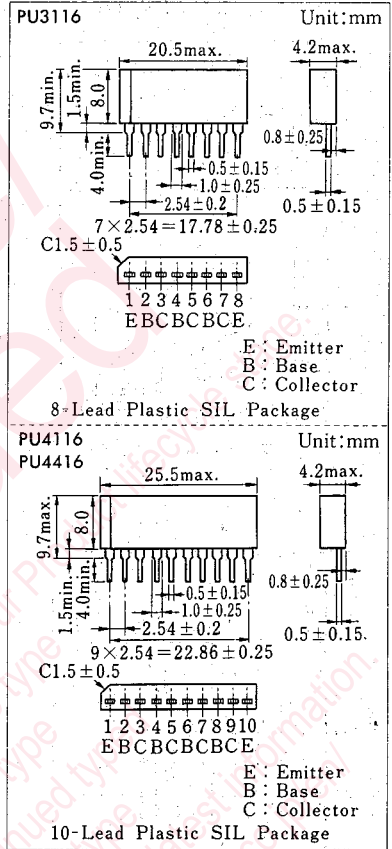
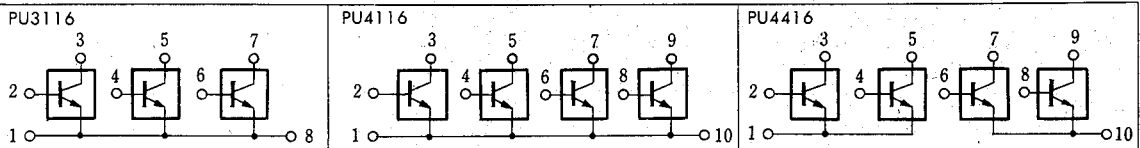
■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	200	V
Collector-emitter voltage	V_{CEO}	150	V
Emitter-base voltage	V_{EBO}	6	V
Peak collector current	I_{CP}	3	A
Collector current	I_C	2	A
Power dissipation	P_D	15	W
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

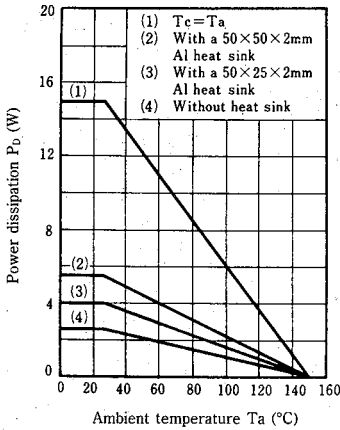
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=200\text{V}, I_E=0$			50	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=4\text{V}, I_C=0$			50	μA
Collector-base voltage	V_{CBO}	$I_C=500\mu\text{A}, I_E=0$	200			V
Collector-emitter voltage	V_{CEO}	$I_C=5\text{mA}, I_B=0$	150			V
Emitter-base voltage	V_{EBO}	$I_E=500\mu\text{A}, I_C=0$	6			V
DC current gain	h_{FE1}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	60		240	
	h_{FE2}	$V_{CE}=10\text{V}, I_C=400\text{mA}$	50			
Base-emitter voltage	V_{BE}	$V_{CE}=10\text{V}, I_C=400\text{mA}$			1	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			1	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1\text{MHz}$		20		MHz

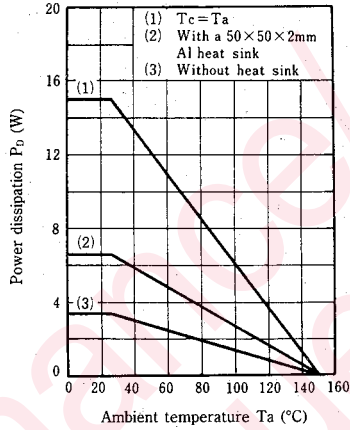
■ Inner Circuit



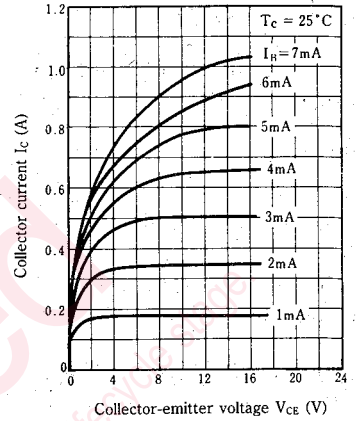
$P_D - T_a$ (PU3116)



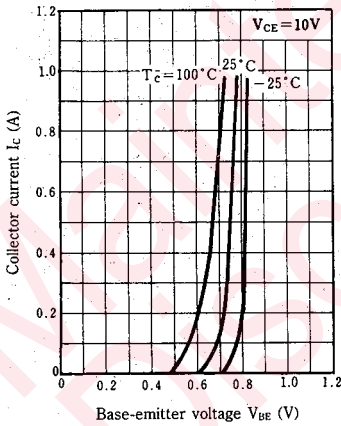
$P_D - T_a$ (PU4116, PU4416)



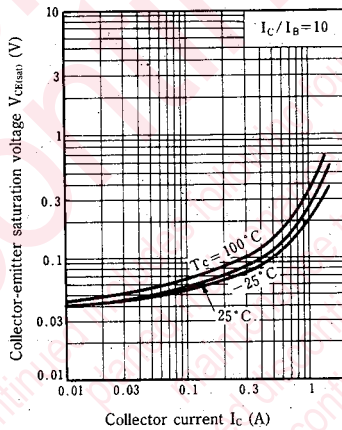
$I_C - V_{CE}$



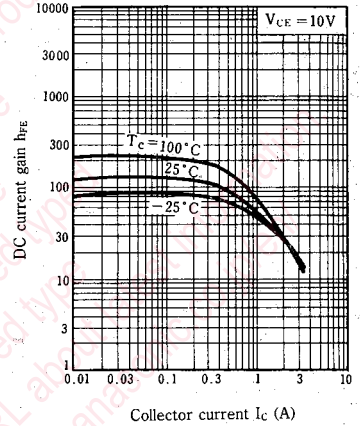
$I_C - V_{BE}$



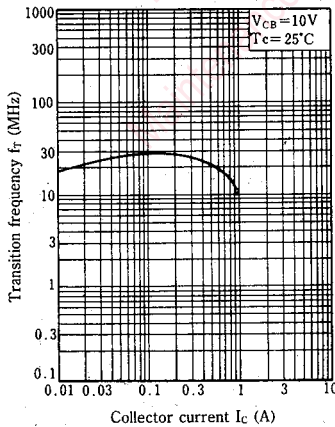
$V_{CE(sat)} - I_C$



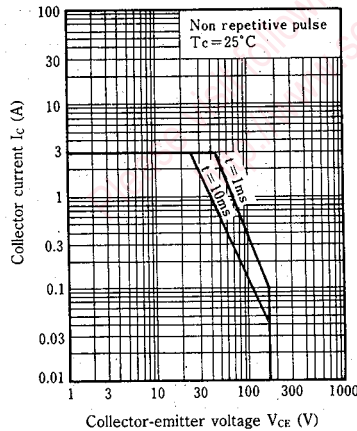
$h_{FE} - I_C$



$f_T - I_C$



Area of safe operation (ASO)



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