PU3214, PU4214, PU4514

Silicon NPN Epitaxial Planar Type

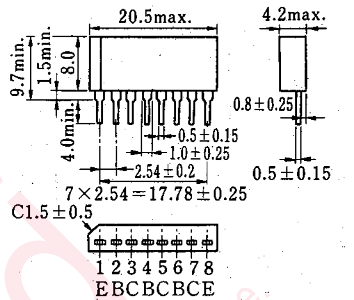
Power Amplifier, Switching
Complementary Pair with PU3114, PU4114, PU4414

■ Features

- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- Good linearity of DC current gain (h_{FE})
- High speed switching
- PU3211: 3 NPN elements
- PU4211: 4 NPN elements
- PU4511: 2 NPN elements × 2 (4 elements in total)

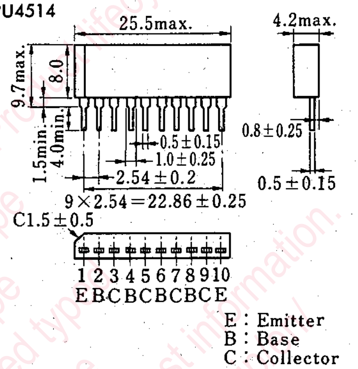
■ Package Dimensions

PU3214 Unit: mm



8-Lead Plastic SIL Package

PU4214
PU4514 Unit: mm



10-Lead Plastic SIL Package

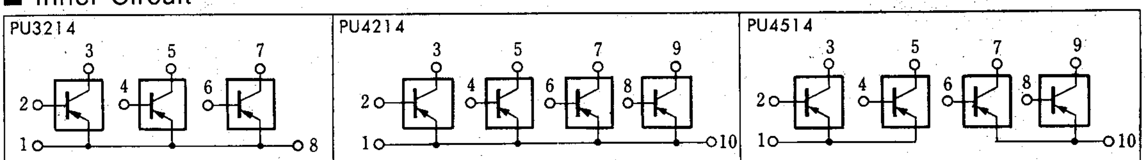
■ Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Value	Unit
Collector-base voltage	V_{CBO}	−40	V
Collector-emitter voltage	V_{CEO}	−20	V
Emitter-base voltage	V_{EBO}	−5	V
Peak collector current	I_{CP}	−12	A
Collector current	I_C	−7	A
Power dissipation	P_D	15	W
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	−55～+150	℃

■ Electrical Characteristics (Tc=25°C)

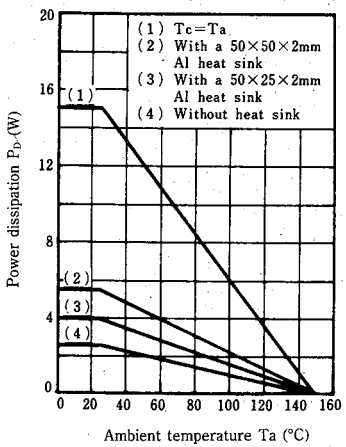
Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB}=-40V, I_E=0$			−50	μA
Emitter cutoff current	I_{EBO}	$V_{EB}=-5V, I_C=0$			−50	μA
Collector-emitter voltage	V_{CEO}	$I_C=-10mA, I_B=0$	−20			V
DC current gain	h_{FE1}	$V_{CE}=-2V, I_C=-0.1A$	45			
	h_{FE2}	$V_{CE}=-2V, I_C=-2A$	60		260	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-5A, I_B=-0.16A$			−0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-5A, I_B=-0.16A$			−1.5	V
Transition frequency	f_T	$V_{CE}=-10V, I_C=-0.5A, f=10MHz$		150		MHz
Collector output capacitance	C_{ob}	$V_{CB}=-10V, I_E=0, f=1MHz$		140		pF
Turn-on time	t_{on}	$I_C=-2A, I_{B1}=-66mA, I_{B2}=66mA$		0.1		μs
Storage time	t_{stg}			0.5		μs
Fall time	t_f			0.1		μs

■ Inner Circuit

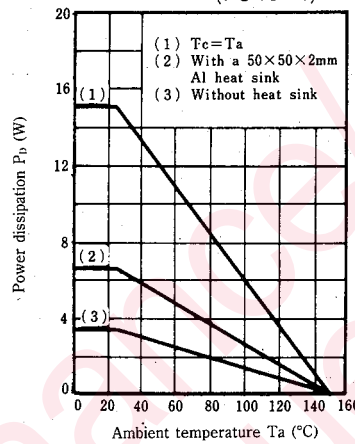


Panasonic

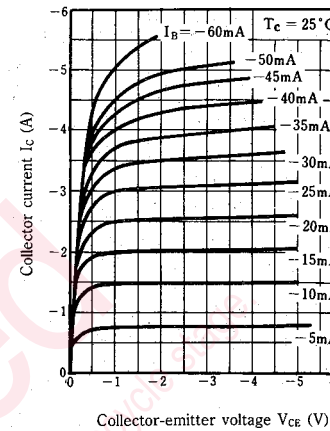
$P_D - Ta$ (PU3214)



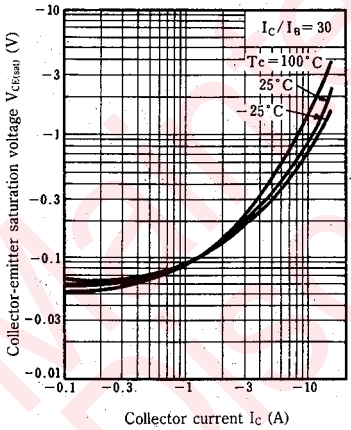
$P_D - Ta$ (PU4214 / PU4514)



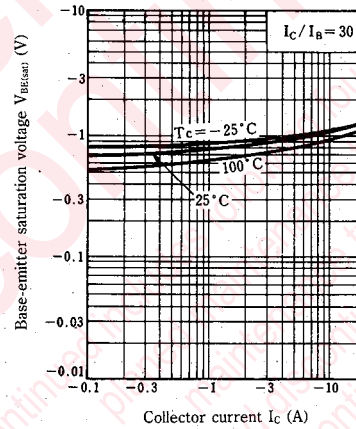
$I_C - V_{CE}$



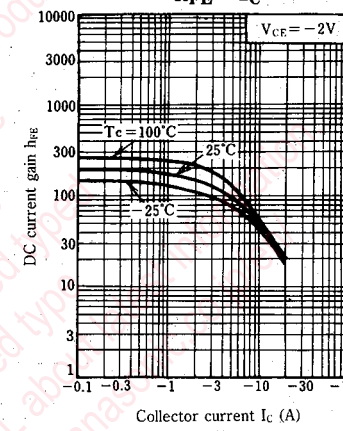
$V_{CE(sat)} - I_C$



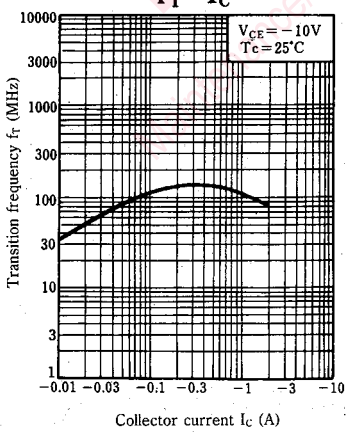
$V_{BE(sat)} - I_C$



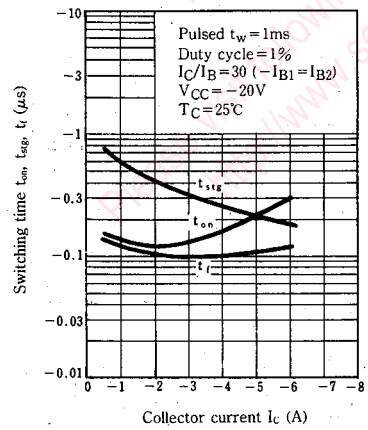
$h_{FE} - I_C$



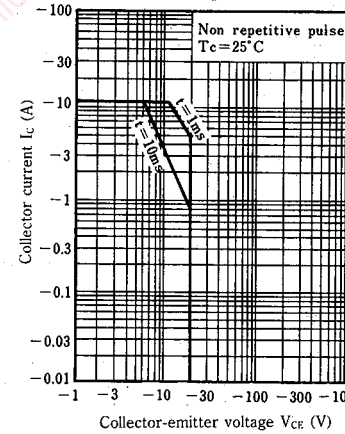
$f_T - I_C$



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



Area of safe operation (ASO)



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