

# PU3220, PU4220, PU4520

Silicon NPN Epitaxial Planar Darlington Type

Power Amplifier, Switching

Complementary Pair with PU3120, PU4120, PU4420

### Features

- High DC current gain ( $h_{FE}$ )
- High speed switching
- PU3220: 3 NPN elements
- PU4220: 4 NPN elements
- PU4520: 2 NPN elements (4 elements in total)

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

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CB0}$	-60	V
Collector-emitter voltage	$V_{CEO}$	-60	V
Emitter-base voltage	$V_{EB0}$	-5	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 ~ +150	$^\circ\text{C}$

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

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CB0}$	$V_{CB} = -60\text{V}, I_E = 0$			-200	$\mu\text{A}$
	$I_{CEO}$	$V_{CE} = -30\text{V}, I_B = 0$			-500	$\mu\text{A}$
Emitter cutoff current	$I_{EB0}$	$V_{EB} = -5\text{V}, I_C = 0$			-2	mA
Collector-emitter voltage	$V_{CEO}$	$I_C = -30\text{mA}, I_B = 0$	-60			V
DC current gain	$h_{FE1}$	$V_{CE} = -3\text{V}, I_C = -0.5\text{A}$	1000			
	$h_{FE2}^*$	$V_{CE} = -3\text{V}, I_C = -3\text{A}$	1000		10000	
Base-emitter voltage	$V_{BE}$	$V_{CE} = -3\text{V}, I_C = -3\text{A}$			-2.5	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -3\text{A}, I_B = -12\text{mA}$			-2	V
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -0.5\text{A}, f = 1\text{MHz}$		15		MHz
Turn-on time	$t_{on}$	$I_C = -3\text{A}, I_{B1} = -12\text{mA}, I_{B2} = 12\text{mA}$		0.3		$\mu\text{s}$
Storage time	$t_{stg}$			2		$\mu\text{s}$
Fall time	$t_f$			0.5		$\mu\text{s}$

### $h_{FE2}$ Classifications

Class	Free	Q	P
$h_{FE2}$	1000 ~ 10000	1000 ~ 5000	2000 ~ 10000

### Package Dimensions

