

# PU3124, PU4124, PU4424

Silicon NPN Triple-Diffused Planar Darlington Type

Power Amplifier, Switching

## Features

- Built-in 60V Zener diode between C and B
- Very small fluctuation in breakdown voltage
- Large energy handling capability
- High speed switching
- PU3124: 3 NPN elements
- PU4124: 4 NPN elements
- PU4424: 2 NPN elements

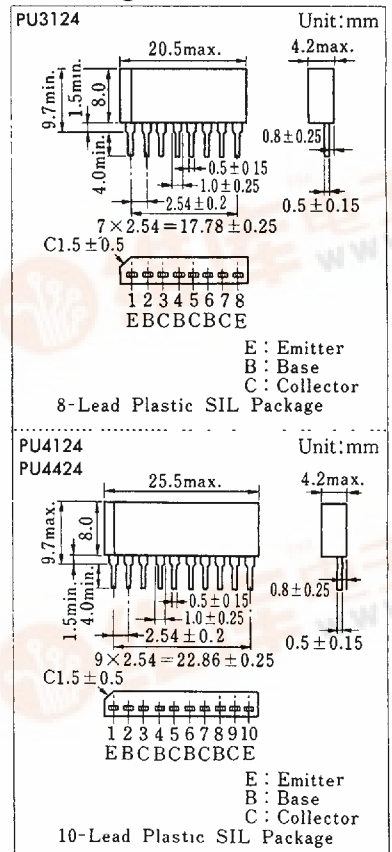
## Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Value	Unit
Collector-base voltage	V <sub>CB0</sub>	60 ± 10	V
Collector-emitter voltage	V <sub>CE0</sub>	60 ± 10	V
Emitter-base voltage	V <sub>EB0</sub>	5	V
Peak collector current	I <sub>CP</sub>	8	A
Collector current	I <sub>C</sub>	4	A
Power dissipation	P <sub>D</sub>	15	W
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 ~ +150	°C

## Electrical Characteristics (Tc=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I <sub>CB0</sub>	V <sub>CB</sub> = 50V, I <sub>E</sub> = 0			100	μA
Emitter cutoff current	I <sub>EB0</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> = 0			2	mA
Collector-emitter voltage	V <sub>CE0</sub>	I <sub>C</sub> = 5mA, I <sub>B</sub> = 0	50		70	V
DC current gain	h <sub>FE1</sub>	V <sub>CE</sub> = 3V, I <sub>C</sub> = 0.5A	1000			
	h <sub>FE2</sub> *1	V <sub>CE</sub> = 3V, I <sub>C</sub> = 3A	1000		10000	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 3A, I <sub>B</sub> = 12mA			2.5	V
		I <sub>C</sub> = 5A, I <sub>B</sub> = 20mA			4	
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 3A, I <sub>B</sub> = 12mA			2.5	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 0.5A, f = 1MHz		20		MHz
Turn-on time	t <sub>on</sub>	I <sub>C</sub> = 3A, I <sub>B1</sub> = 12mA, I <sub>B2</sub> = -12mA		0.3		μs
Storage time	t <sub>str</sub>			3		μs
Fall time	t <sub>f</sub>				1	μs
Energy handling capability	E <sub>s</sub> *2	I <sub>C</sub> = 1A, L = 100mH, R <sub>BE</sub> = 100 Ω	50			mJ

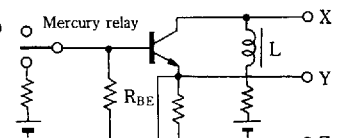
## Package Dimensions



## hFE Classifications

Class	Free	Q	P
Part	1000~10000	1000~5000	2000~10000

\*2E<sub>s</sub>/b Test circuit (1 circuit)



# Power Transistor Arrays

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## Inner Circuit

