

# 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	$V_{CBO}$	$60 \pm 10$	V
Collector-emitter voltage	$V_{CE0}$	$60 \pm 10$	V
Emitter-base voltage	$V_{EBO}$	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	°C
Storage temperature	$T_{stg}$	$-55 \sim +150$	°C

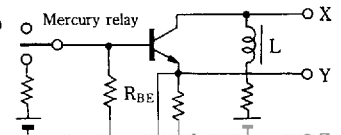
### Electrical Characteristics (Tc=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 50V, I_E = 0$			100	$\mu A$
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$			2	mA
Collector-emitter voltage	$V_{CE0}$	$I_C = 5mA, I_B = 0$	50		70	V
DC current gain	$h_{FE1}$	$V_{CE} = 3V, I_C = 0.5A$	1000			
	$h_{FE2}^{*1}$	$V_{CE} = 3V, I_C = 3A$	1000		10000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3A, I_B = 12mA$			2.5	V
		$I_C = 5A, I_B = 20mA$			4	
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 3A, I_B = 12mA$			2.5	V
Transition frequency	$f_T$	$V_{CE} = 10V, I_C = 0.5A, f = 1MHz$		20		MHz
Turn-on time	$t_{on}$	$I_C = 3A, I_{B1} = 12mA, I_{B2} = -12mA$		0.3		$\mu s$
Storage time	$t_{stg}$			3		$\mu s$
Fall time	$t_f$				1	$\mu s$
Energy handling capability	$E_s \cdot b^{*2}$		$I_C = 1A, L = 100mH, R_{BE} = 100 \Omega$	50		

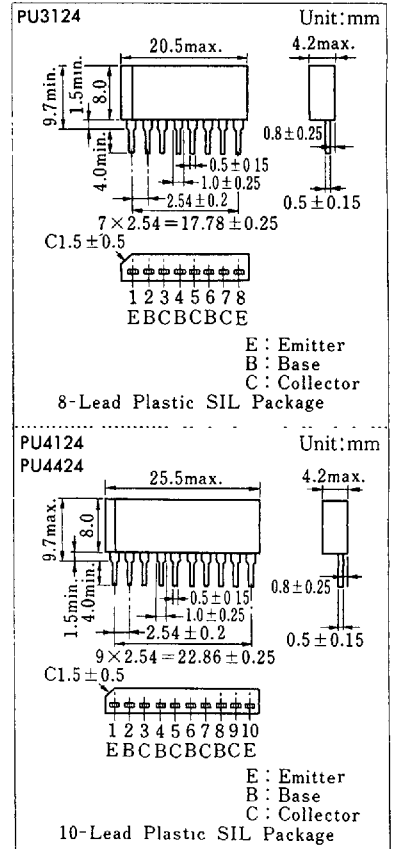
\*1  $h_{FE2}$  Classifications

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

\*2  $E_{S/b}$  Test circuit (1 circuit)



### Package Dimensions



6932852 0017014 75T

Inner Circuit

