

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 ± 10	V
Collector-emitter voltage	V_{CEO}	60 ± 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

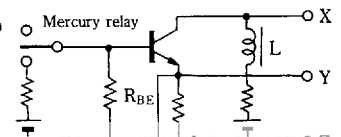
Electrical Characteristics (Tc=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 50V, I_E = 0$			100	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			2	mA
Collector-emitter voltage	V_{CEO}	$I_C = 5mA, I_B = 0$	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		μs
Storage time	t_{stg}			3		μs
Fall time	t_f				1	μs
Energy handling capability	$E_s \cdot b^{*2}$		$I_C = 1A, L = 100mH, R_{BE} = 100 \Omega$	50		

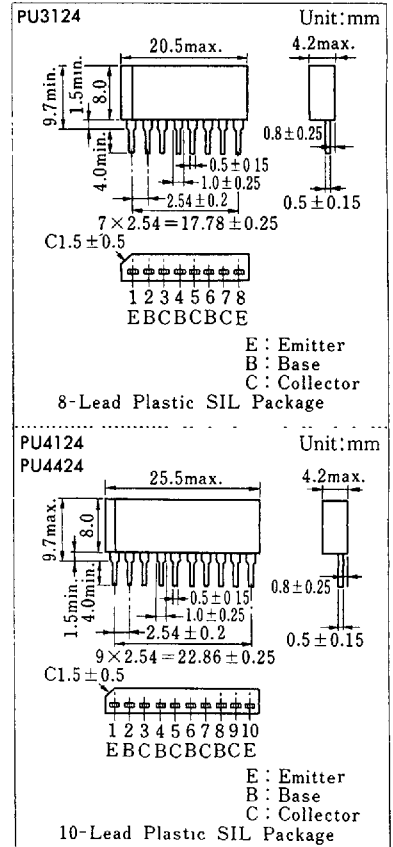
*1 h_{FE2} Classifications

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

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



Package Dimensions



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Inner Circuit

