PU3123, PU4123, PU4423

Silicon NPN Triple-Diffused Planar Darlington Type

Power Amplifier, Switching

■ Features

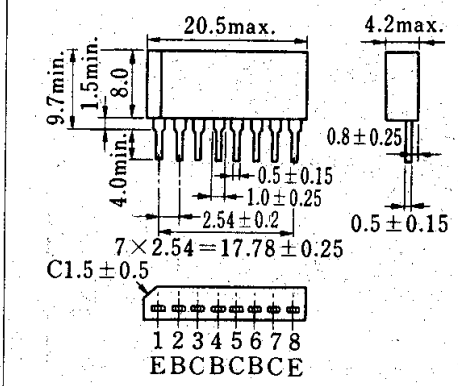
- Built-in 60V Zener diode between C and B
- Very small fluctuation in breakdown voltage
- Large energy handling capability
- High speed switching
- PU3123: 3 NPN elements
- PU4123: 4 NPN elements
- PU4123: 2 NPN elements

■ 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}	4	A
Collector current	I_C	2	A
Power dissipation	P_D	15	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55～+150	°C

■ Package Dimensions

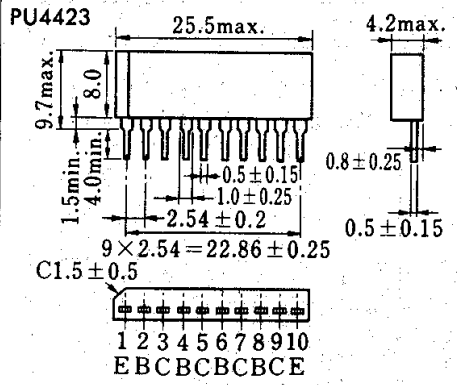
PU3123 Unit:mm



E : Emitter
B : Base
C : Collector

8-Lead Plastic SIL Package

PU4123
PU4423 Unit:mm



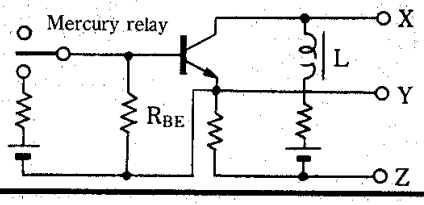
E : Emitter
B : Base
C : Collector

10-Lead Plastic SIL Package

■ Electrical Characteristics (Tc=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	I_{CBO}	$V_{CBO}=50V$, $I_E=0$			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}	$V_{CE}=4V$, $I_C=1A$	1000			
	h_{FE2} *1	$V_{CE}=4V$, $I_C=2A$	1000		10000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2A$, $I_B=8mA$			2.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=2A$, $I_B=8mA$			2.5	V
Transition frequency	f_T	$V_{CE}=10V$, $I_C=0.5A$, f=1MHz		20		MHz
Turn-on time	t_{on}	$I_C=2A$, $I_{B1}=8mA$, $I_{B2}=-8mA$		0.4		μs
Storage time	t_{stg}			3		μs
Fall time	t_f			1		μs
Energy handling capability	$E_{s/b}$ *2	$I_C=1A$, L=100mH, $R_{BE}=100\Omega$	25			mJ

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



h_{FE2} Classifications

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