

# PU3127, PU4127

## Silicon NPN Triple-Diffused Planar Type

Power Amplifier, Switching

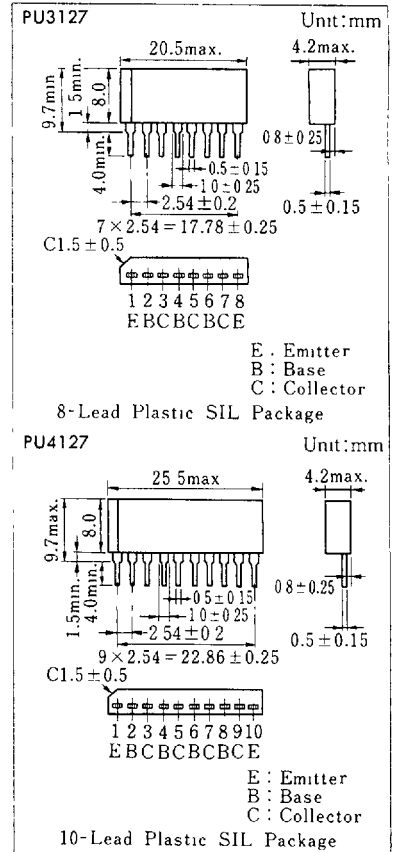
### ■ Features

- High DC current gain ( $h_{FE}$ )
- Good linearity of DC current gain ( $h_{FE}$ )
- PU3127: 3 NPN elements
- PU4127: 4 NPN elements

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

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CBO}$	$35 \pm 5$	V
Collector-emitter voltage	$V_{CEO}$	$35 \pm 5$	V
Emitter-base voltage	$V_{EBO}$	6	V
Peak collector current	$I_{CP}$	6	A
Collector current	$I_C$	3	A
Base current	$I_B$	1	A
Power dissipation	$P_D$	15	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{str}$	$-55 \sim +150$	$^\circ\text{C}$

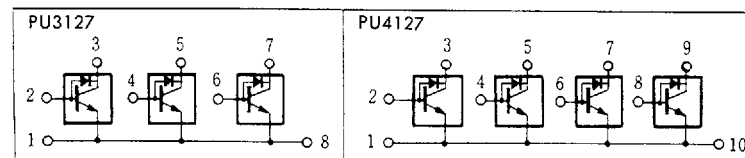
### ■ Package Dimensions



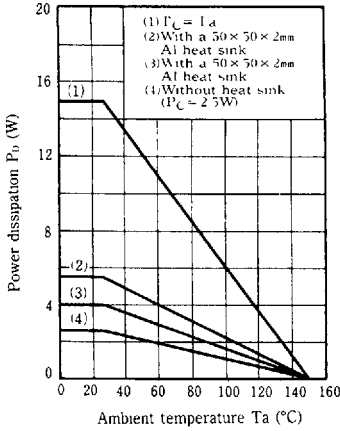
### ■ Electrical Characteristics ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB}=30\text{V}, I_E=0$			100	$\mu\text{A}$
	$I_{CEO}$	$V_{CE}=30\text{V}, I_{B1}=0$			100	$\mu\text{A}$
Emitter cutoff current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			100	$\mu\text{A}$
Collector-emitter voltage	$V_{CFO}$	$I_C=25\text{mA}, I_B=0$	30		40	V
DC current gain	$h_{FE}$	$V_{CE}=4\text{V}, I_C=0.5\text{A}$	500		2500	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=2\text{A}, I_B=0.05\text{A}$			1	V
Transition frequency	$f_T$	$V_{CF}=12\text{V}, I_C=0.2\text{A}, f=10\text{MHz}$		50		MHz

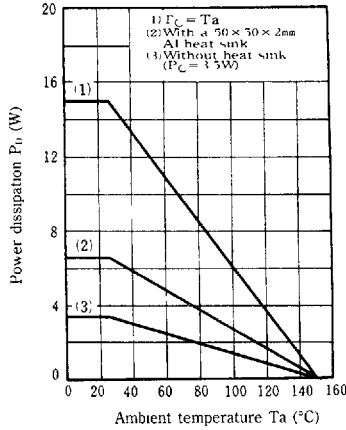
### ■ Inner Circuit



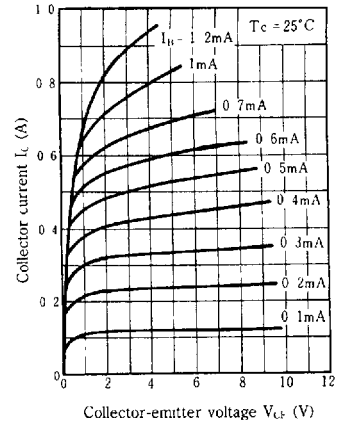
**$P_D - T_a$  (PU3127)**



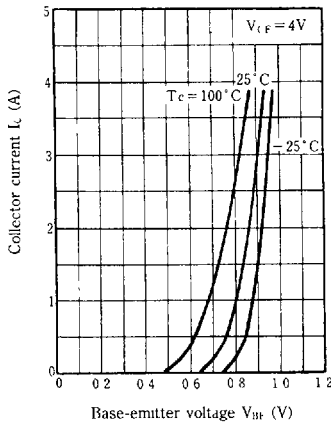
**$P_D - T_a$  (PU4127)**



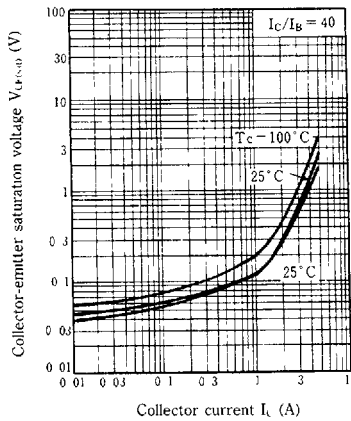
**$I_C - V_{CE}$**



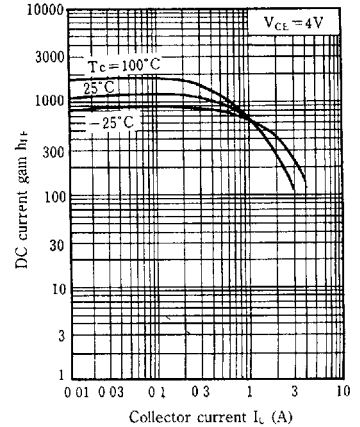
**$I_C - V_{BE}$**



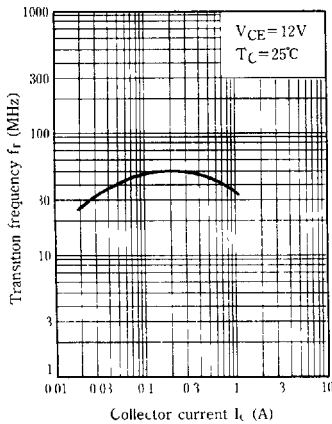
**$V_{CE(sat)} - I_C$**



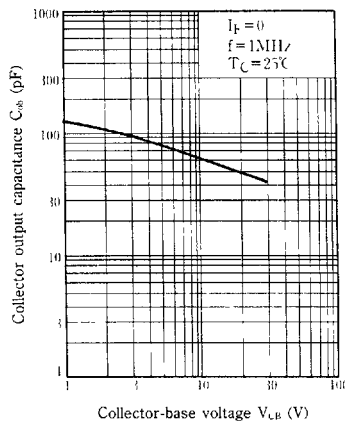
**$h_{FE} - I_C$**



**$f_T - I_C$**



**$C_{ob} - V_{CB}$**



**Safety operation area-forward bias (ASO)**

