

# PUA3228

## Silicon NPN Epitaxial Planar Type

### Power Amplifier

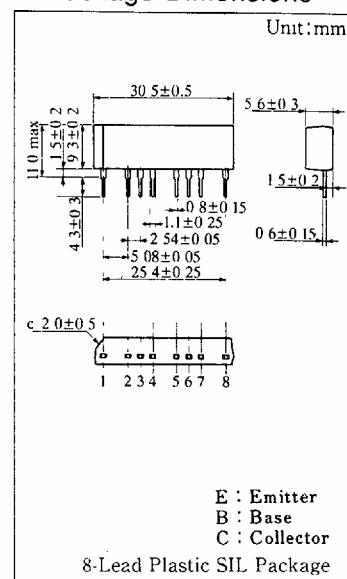
#### ■ Features

- Low collector-emitter saturation voltage ( $V_{CE(sat)}$ )
- Good linearity of ( $h_{FE}$ )
- High collector current ( $I_C$ )
- 3 PNP elements

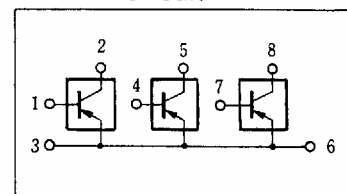
#### ■ Absolute Maximum Ratings ( $T_c=25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Collector-base voltage	$V_{CBO}$	-30	V
Collector-emitter voltage	$V_{CEO}$	-30	V
Emitter-base voltage	$V_{EBO}$	-6	V
Peak collector current	$I_{CP}$	-4	A
Collector current	$I_C$	-2	A
Power dissipation	$P_C$	20	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 ~ +150	$^\circ\text{C}$

#### ■ Package Dimensions

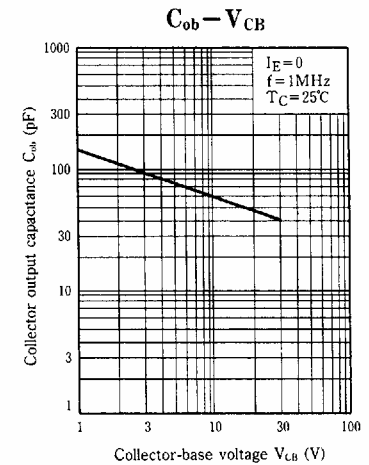
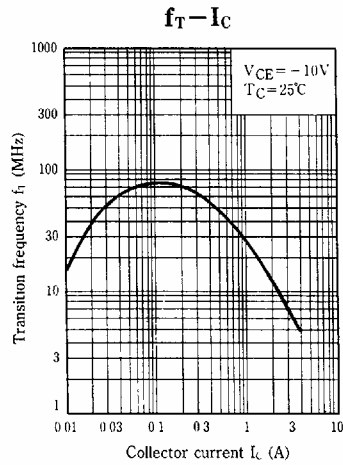
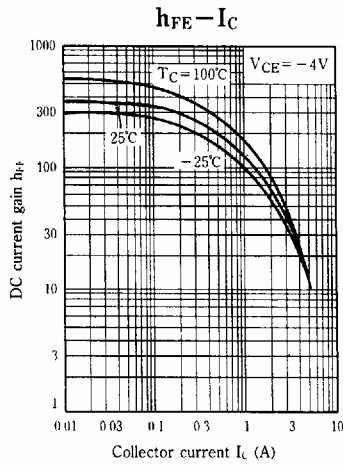
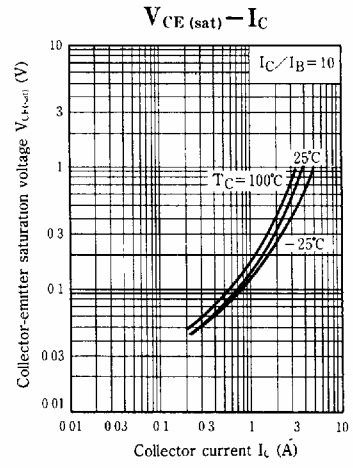
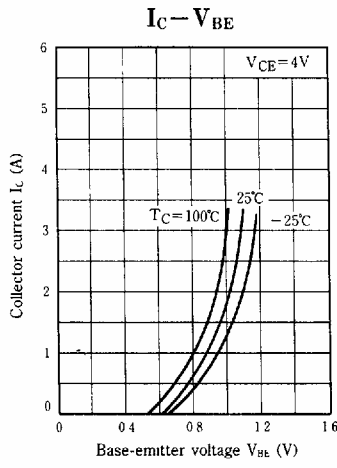
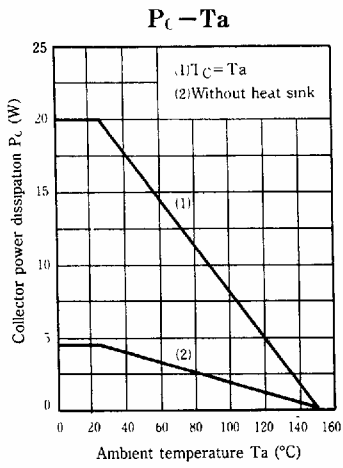


#### ■ Inner Circuit



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

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	$I_{CES}$	$V_{CE} = -30\text{V}, V_{BF} = 0$			-100	$\mu\text{A}$
Collector cutoff current	$I_{CFO}$	$V_{CE} = -15\text{V}, I_B = 0$			-100	$\mu\text{A}$
Emitter cutoff current	$I_{LBO}$	$V_{EB} = -6\text{V}, I_C = 0$			-50	$\mu\text{A}$
Collector-emitter voltage	$V_{CE0}$	$I_C = -30\text{mA}, I_B = 0$	-30			V
DC current gain	$h_{FE}$	$V_{CE} = -4\text{V}, I_C = -0.1\text{A}$	35			
		$V_{CE} = -4\text{V}, I_C = -1\text{A}$	80		280	
Base-emitter voltage	$V_{BE}$	$V_{CE} = -4\text{V}, I_C = -1\text{A}$			-1.2	V
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -1\text{A}, I_B = -0.1\text{A}$			-0.8	V
Transition frequency	$f_T$	$V_{CE} = -10\text{V}, I_C = -0.1\text{A}, f = 10\text{MHz}$		80		MHz
Turn-on time	$t_{on}$	$I_C = -1\text{A}$		0.1		$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1} = -0.1\text{A}, I_{B2} = 0.1\text{A}$		1.3		$\mu\text{s}$
Collector current fall time	$t_f$	$V_{CE} = -20\text{V}$		0.3		$\mu\text{s}$



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

