

# PUA3173 (PU3173)

## Silicon NPN triple diffusion planar type darlington

For power amplification

Complementary to PUA3273 (PU3273)

### ■ Features

- High forward current transfer ratio  $h_{FE}$
- High-speed switching
- NPN 3 elements

### ■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	150	V
Collector-emitter voltage (Base open)	$V_{CEO}$	100	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	4	A
Peak collector current	$I_{CP}$	8	A
Collector power dissipation	$P_C$	15	W
		$T_a = 25^\circ\text{C}$	2.4
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

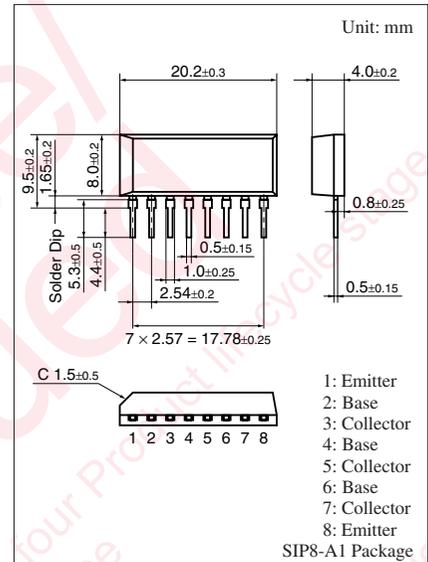
### ■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 10\text{ mA}, I_B = 0$	100			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 150\text{ V}, I_E = 0$			100	$\mu\text{A}$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 80\text{ V}, I_B = 0$			100	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 5\text{ V}, I_C = 0$			5	mA
Forward current transfer ratio	$h_{FE1}^*$	$V_{CE} = 4\text{ V}, I_C = 2\text{ A}$	1 000		10 000	—
	$h_{FE2}$	$V_{CE} = 4\text{ V}, I_C = 4\text{ A}$	500			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 4\text{ A}, I_B = 16\text{ mA}$			2.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 4\text{ A}, I_B = 16\text{ mA}$			2.5	V
Transition frequency	$f_T$	$V_{CE} = 10\text{ V}, I_C = 0.5\text{ A}, f = 1\text{ MHz}$		20		MHz
Turn-on time	$t_{on}$	$I_C = 4\text{ A}$		0.27		$\mu\text{s}$
Storage time	$t_{stg}$	$I_{B1} = 16\text{ mA}, I_{B2} = -16\text{ mA}$		2.9		$\mu\text{s}$
Fall time	$t_f$	$V_{CC} = 50\text{ V}$		1.0		$\mu\text{s}$

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

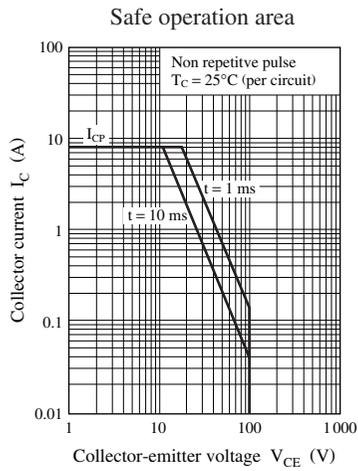
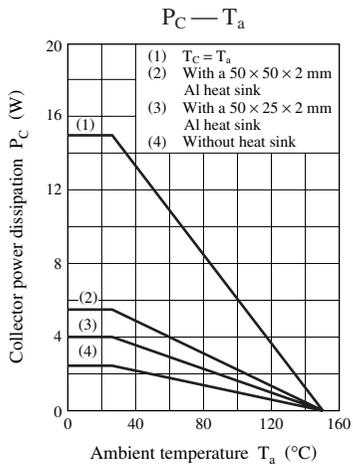
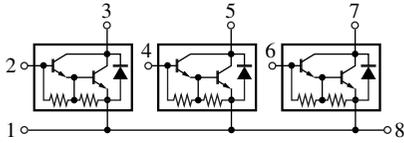
2. \*: Rank classification

Rank	Free	P	Q
$h_{FE}$	1 000 to 10 000	2 000 to 10 000	1 000 to 5 000



Note) The part number in the parenthesis shows conventional part number.

Internal Connection



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