

## BD676A/678A/680A/682

# Medium Power Linear and Switching Applications

- Medium Power Darlington TR
- Complement to BD675A, BD677A, BD679A and BD681 respectively



## **PNP Epitaxial Silicon Transistor**

1. Emitter 2.Collector 3.Base

### **Absolute Maximum Ratings** T<sub>C</sub>=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage : BD676A	- 45	V
	: BD678A	- 60	V
	: BD680A	- 80	V
	: BD682	- 100	V
V <sub>CEO</sub>	Collector-Emitter Voltage : BD676A	- 45	V
	: BD678A	- 60	V
	: BD680A	- 80	V
	: BD682	- 100	V
V <sub>EBO</sub>	Emitter-Base Voltage	- 5	V
I <sub>C</sub>	Collector Current (DC)	- 4	Α
I <sub>CP</sub>	*Collector Current (Pulse)	- 6	А
I <sub>B</sub>	Base Current	- 100	mA
P <sub>C</sub>	Collector Dissipation (T <sub>C</sub> =25°C)	40	W
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	- 65 ~ 150	°C

### Electrical Characteristics T<sub>C</sub>=25°C unless otherwise noted

Symbol	Param	eter	Test Condition	Min.	Тур.	Max.	Units
V <sub>CEO</sub> (sus)	Collector-Emitter Sustaining Voltage						
		: BD676A	$I_C = -50 \text{mA}, I_B = 0$	- 45			
		: BD678A		- 60			
		: BD680A		- 80			
		: BD682		- 100			
I <sub>CBO</sub>	Collector-Base Voltage	: BD676A	$V_{CB} = -45V, I_{E} = 0$			- 200	μΑ
		: BD678A	$V_{CB} = -60V, I_{E} = 0$			- 200	μΑ
		: BD680A	$V_{CB} = -80V, I_{E} = 0$			- 200	μΑ
		: BD682	$V_{CB} = -100V, V_{BE} = 0$			- 200	μΑ
I <sub>CEO</sub>	Collector Cut-off Current	: BD676A	$V_{CE} = -45V, V_{BE} = 0$			- 500	μΑ
		: BD678A	$V_{CE} = -60V, V_{BE} = 0$			- 500	μΑ
		: BD680A	$V_{CE} = -80V, V_{BE} = 0$			- 500	μΑ
		: BD682	$V_{CE} = -100V, V_{BE} = 0$			- 500	μΑ
I <sub>EBO</sub>	Emitter Cut-off Current		$V_{EB} = -5V, I_{C} = 0$			- 2	mA
h <sub>FE</sub>	* DC Current Gain	: BD676A/678A/680A	$V_{CE} = -3V, I_{C} = -2A$	750			
		: BD682	$V_{CE} = -3V, I_{C} = -1.5A$	750			
V <sub>CE</sub> (sat)	* Collector-Emitter Saturation Voltage						
		: BD676A/678A/680A	$I_C = -2A$ , $I_B = -40mA$			- 2.8	V
		: BD682	$I_C = -1.5A$ , $I_B = -30mA$			- 2.5	V
V <sub>BE</sub> (on)	* Base-Emitter ON Voltage	e : BD676A/678A/680A	$V_{CE} = -3V, I_{C} = -2A$			- 2.5	V
		: BD682	$V_{CE} = -3V, I_{C} = -1.5A$			- 2.5	V

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## **Typical Characteristics**

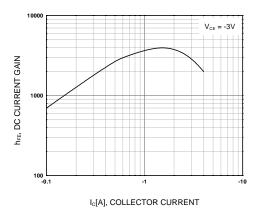


Figure 1. DC current Gain

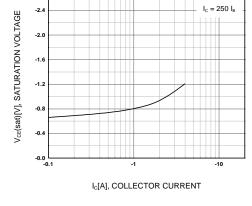


Figure 2. Collector-Emitter Saturation Voltage

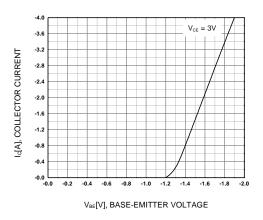


Figure 3. Base-Emitter On Voltage

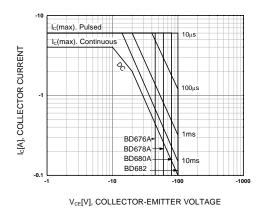


Figure 4. Safe Operating Area

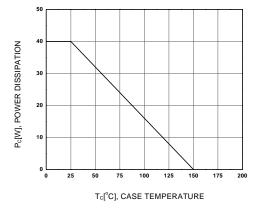
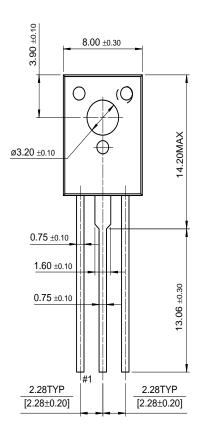


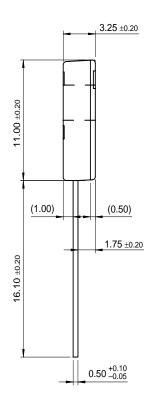
Figure 5. Power Derating

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## **Package Demensions**

TO-126







Dimensions in Millimeters

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