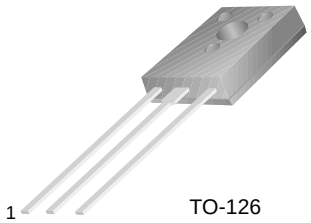
FAIRCHILD SEMICONDUCTOR™

BD675A/677A/679A/681

Medium Power Linear and Switching Applications

- Medium Power Darlington TR
- Complement to BD676A, BD678A, BD680A and BD682 respectively



TO-126

1. Emitter 2.Collector 3.Base

NPN Epitaxial Silicon Transistor

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	: BD675A	45	V
		: BD677A	60	V
		: BD679A	80	V
		: BD681	100	V
V_{CEO}	Collector-Emitter Voltage	: BD675A	45	V
		: BD677A	60	V
		: BD679A	80	V
		: BD681	100	V
V_{EBO}	Emitter-Base Voltage		5	V
I_C	Collector Current (DC)		4	A
I_{CP}	*Collector Current (Pulse)		6	A
I_B	Base Current		100	mA
P_C	Collector Dissipation (T_C=25°C)		40	W
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature		- 65 ~ 150	°C

Electrical Characteristics T_C=25°C unless otherwise noted

Symbol	Parameter		Test Condition	Min.	Typ.	Max.	Units
V_{CEO}(sus)	*Collector-Emitter Sustaining Voltage						
		: BD675A	I_C = 50mA, I_B = 0	45			V
		: BD677A		60			V
		: BD679A		80			V
		: BD681		100			V
I_{CBO}	Collector-Base Voltage	: BD675A	V_{CB} = 45V, I_E = 0			200	µA
		: BD677A	V_{CB} = 60V, I_E = 0			200	µA
		: BD679A	V_{CB} = 80V, I_E = 0			200	µA
		: BD681	V_{CB} = 100V, V_{BE} = 0			200	µA
I_{CEO}	Collector Cut-off Current	: BD675A	V_{CE} = 45V, V_{BE} = 0			500	µA
		: BD677A	V_{CE} = 60V, V_{BE} = 0			500	µA
		: BD679A	V_{CE} = 80V, V_{BE} = 0			500	µA
		: BD681	V_{CE} = 100V, V_{BE} = 0			500	µA
I_{EBO}	Emitter Cut-off Current		V_{EB} = 5V, I_C = 0			2	mA
h_{FE}	* DC Current Gain	: BD675A/677A/679A	V_{CE} = 3V, I_C = 2A	750			
		: BD681	V_{CE} = 3V, I_C = 1.5A	750			
V_{CE}(sat)	* Collector-Emitter Saturation Voltage						
		: BD675A/677A/679A	I_C = 2A, I_B = 40mA			2.8	V
		: BD681	I_C = 1.5A, I_B = 30mA			2.5	V
V_{BE}(on)	* Base-Emitter ON Voltage	: BD675A/677A/679A	V_{CE} = 3V, I_C = 2A			2.5	V
		: BD681	V_{CE} = 3V, I_C = 1.5A			2.5	V

* Pulse Test: PW=300µs, duty Cycle=1.5% Pulsed

Typical Characteristics

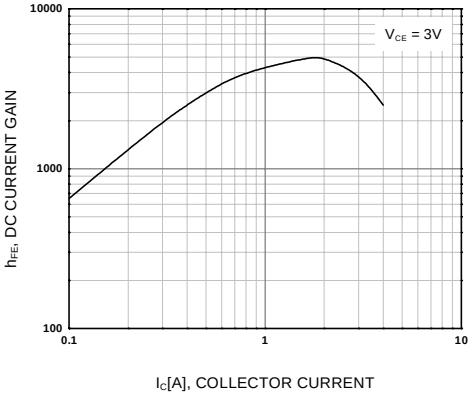


Figure 1. DC current Gain

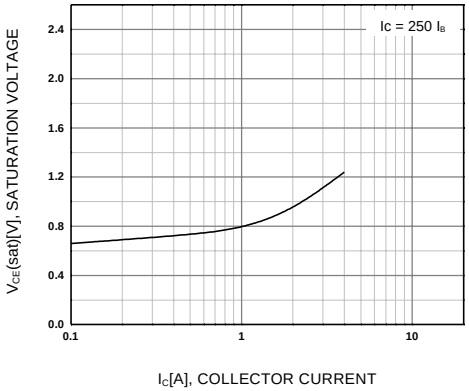


Figure 2. Collector-Emitter Saturation Voltage

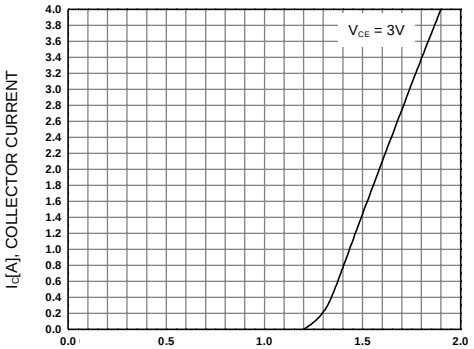


Figure 3. Base-Emitter On Voltage

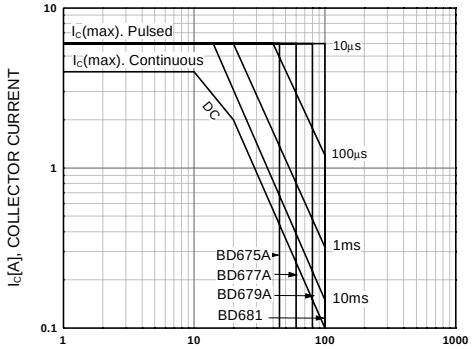


Figure 4. Safe Operating Area

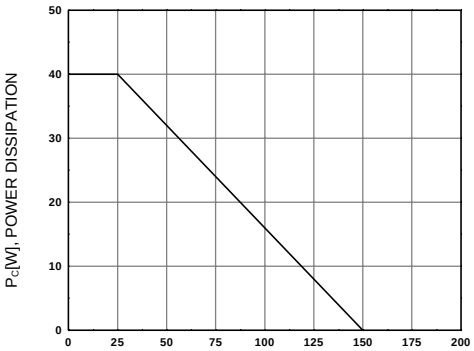
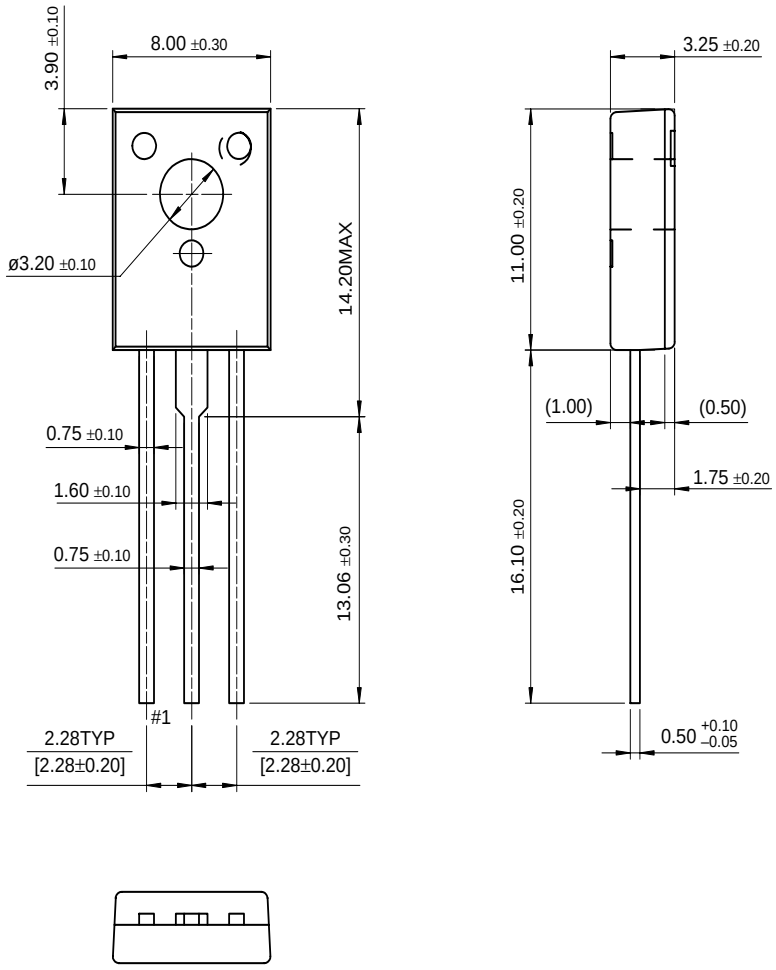


Figure 5. Power Derating

Package Demensions

TO-126



Dimensions in Millimeters

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