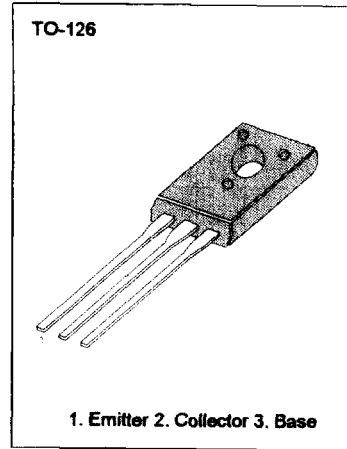


**MEDIUM POWER DARLINGTON TR  
MEDIUM POWER LINEAR AND SWITCHING  
APPLICATIONS**

• Complement to BD675A, BD677A, BD679A and BD681 respectively

**ABSOLUTE MAXIMUM RATINGS**

| Characteristic                                   | Symbol    | Rating    | Unit             |   |
|--|-----------|-----------|------------------|---|
| Collector Base Voltage                           | $V_{CBO}$ | BD676A    | - 45             | V |
|  |           | BD678A    | - 60             | V |
|  |           | BD680A    | - 80             | V |
|  |           | BD682     | - 100            | V |
| Collector Emitter Voltage                        | $V_{CEO}$ | BD676A    | - 45             | V |
|  |           | BD678A    | - 60             | V |
|  |           | BD680A    | - 80             | V |
|  |           | BD682     | - 100            | V |
| Emitter Base Voltage                             | $V_{EBO}$ | - 5       | V                |   |
| Collector Current (DC)                           | $I_C$     | - 4       | A                |   |
| Collector Current (Pulse)                        | $I_C$     | - 6       | A                |   |
| Base Current                                     | $I_B$     | - 100     | mA               |   |
| Collector Dissipation ( $T_C=25^\circ\text{C}$ ) | $P_C$     | 40        | W                |   |
| Junction Temperature                             | $T_J$     | 150       | $^\circ\text{C}$ |   |
| Storage Temperature                              | $T_{STG}$ | -65 ~ 150 | $^\circ\text{C}$ |   |

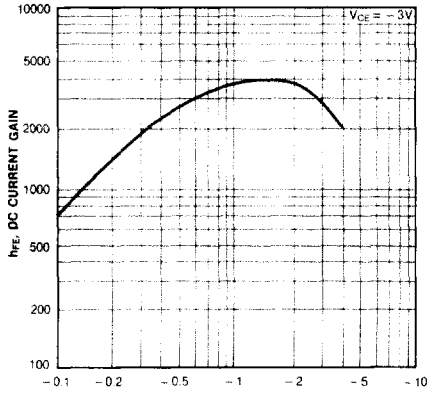


**ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ )**

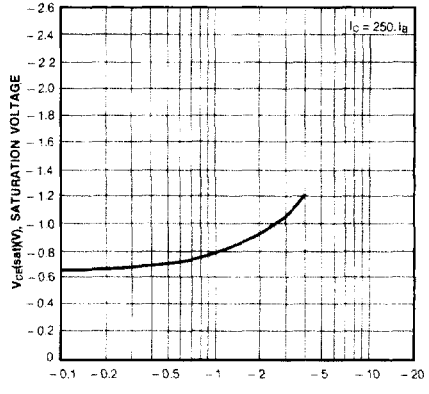
| Characteristic                        | Symbol         | Test Condition                          | Min              | Typ  | Max   | Unit          |
|---------------------------------------|----------------|---|------------------|------|-------|---------------|
| *Collector Emitter Sustaining Voltage | $V_{CEO(sus)}$ | $I_C = -50\text{mA}, I_B = 0$           | BD676A           | - 45 |       |               |
| BD678A                                |                |   | - 60             |      |       |               |
| BD680A                                |                |   | - 80             |      |       |               |
| BD682                                 |                |   | - 100            |      |       |               |
| Collector Base Voltage                | $I_{CBO}$      | $V_{CB} = -45\text{V}, I_E = 0$         | BD676A           |      | - 200 | $\mu\text{A}$ |
|                                       |                |   | BD678A           |      | - 200 | $\mu\text{A}$ |
|                                       |                |   | BD680A           |      | - 200 | $\mu\text{A}$ |
|                                       |                |   | BD682            |      | - 200 | $\mu\text{A}$ |
| Collector Cutoff Current              | $I_{CEO}$      | $V_{CE} = -45\text{V}, V_{BE} = 0$      | BD676A           |      | - 500 | $\mu\text{A}$ |
|                                       |                |   | BD678A           |      | - 500 | $\mu\text{A}$ |
|                                       |                |   | BD680A           |      | - 500 | $\mu\text{A}$ |
|                                       |                |   | BD682            |      | - 500 | $\mu\text{A}$ |
| Emitter Cutoff Current                | $I_{EBO}$      | $V_{EB} = -5\text{V}, I_C = 0$          |                  |      | - 2   | mA            |
| *DC Current Gain                      | $h_{FE}$       | $V_{CE} = -3\text{V}, I_C = -2\text{A}$ | BD676A/678A/680A | 750  |       |               |
|                                       |                |   | BD682            | 750  |       |               |
| *Collector Emitter Saturation Voltage | $V_{CE(sat)}$  | $I_C = -2\text{A}, I_B = -40\text{mA}$  | BD676A/678A/680A |      | - 2.8 | V             |
|                                       |                |   | BD682            |      | - 2.5 | V             |
| *Base Emitter On Voltage              | $V_{BE(on)}$   | $V_{CE} = -3\text{V}, I_C = -2\text{A}$ | BD676A/678A/680A |      | - 2.5 | V             |
|                                       |                |   | BD682            |      | - 2.5 | V             |

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

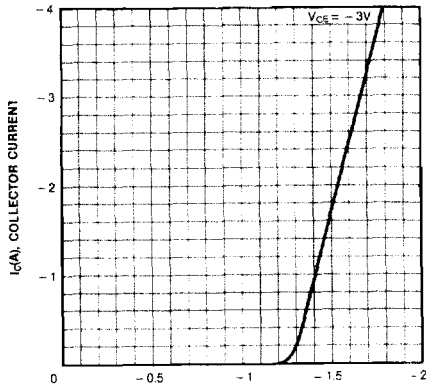
DC CURRENT GAIN



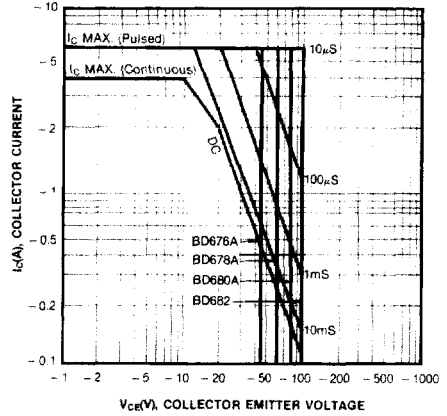
COLLECTOR EMITTER SATURATION VOLTAGE



Ic(A), COLLECTOR CURRENT  
BASE EMITTER VOLTAGE



Ic(A), COLLECTOR CURRENT  
SAFE OPERATING AREA



VBE(V), BASE EMITTER VOLTAGE  
POWER DERATING

