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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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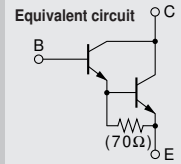
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# Darlington 2SD2643



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1687)

Application : Audio, Series Regulator and General Purpose

**Absolute maximum ratings** (Ta=25°C)

| Symbol           | Ratings                   | Unit |
|------------------|---------------------------|------|
| V <sub>CB0</sub> | 110                       | V    |
| V <sub>CE0</sub> | 110                       | V    |
| V <sub>EB0</sub> | 5                         | V    |
| I <sub>c</sub>   | 6                         | A    |
| I <sub>B</sub>   | 1                         | A    |
| P <sub>c</sub>   | 60 (T <sub>c</sub> =25°C) | W    |
| T <sub>J</sub>   | 150                       | °C   |
| T <sub>stg</sub> | -55 to +150               | °C   |

**Electrical Characteristics** (Ta=25°C)

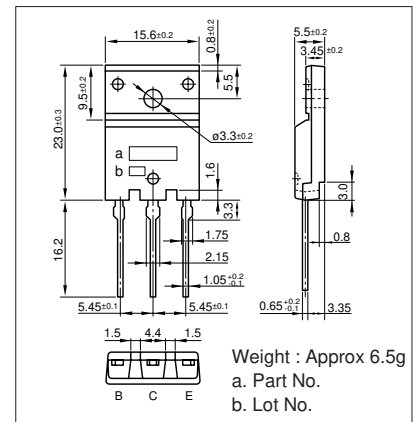
| Symbol               | Conditions                                  | Ratings  | Unit |
|----------------------|---|----------|------|
| I <sub>CB0</sub>     | V <sub>CB</sub> =110V                       | 100max   | μA   |
| I <sub>EB0</sub>     | V <sub>EB</sub> =5V                         | 100max   | μA   |
| V <sub>(BR)CEO</sub> | I <sub>c</sub> =30mA                        | 110min   | V    |
| h <sub>FE</sub>      | V <sub>CE</sub> =4V, I <sub>c</sub> =5A     | 5000min* |      |
| V <sub>CE(sat)</sub> | I <sub>c</sub> =5A, I <sub>B</sub> =5mA     | 2.5max   | V    |
| V <sub>BE(sat)</sub> | I <sub>c</sub> =5A, I <sub>B</sub> =5mA     | 3.0max   | V    |
| f <sub>T</sub>       | V <sub>CE</sub> =12V, I <sub>E</sub> =-0.5A | 60typ    | MHz  |
| C <sub>OB</sub>      | V <sub>CB</sub> =10V, f=1MHz                | 55typ    | pF   |

\*h<sub>FE</sub> Rank ○(5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

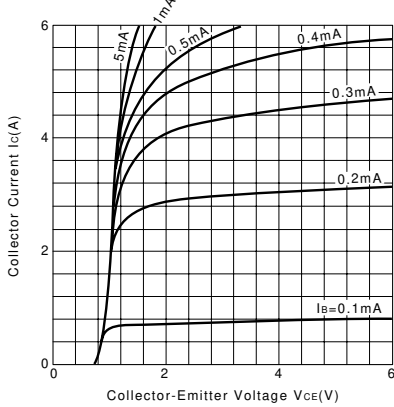
**Typical Switching Characteristics (Common Emitter)**

| V <sub>CC</sub> (V) | R <sub>L</sub> (Ω) | I <sub>c</sub> (A) | V <sub>BB1</sub> (V) | V <sub>BB2</sub> (V) | I <sub>B1</sub> (mA) | I <sub>B2</sub> (mA) | t <sub>on</sub> (μs) | t <sub>stg</sub> (μs) | t <sub>f</sub> (μs) |
|---------------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|---------------------|
| 30                  | 6                  | 5                  | 10                   | -5                   | 5                    | -5                   | 0.8typ               | 6.2typ                | 1.1typ              |

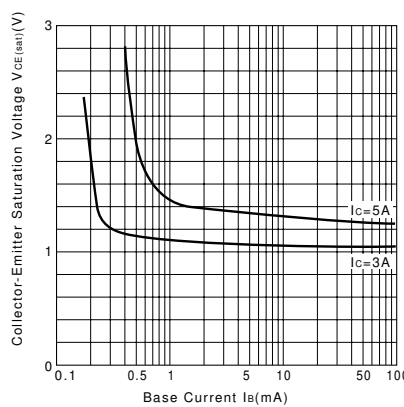
**External Dimensions FM100(TO3PF)**



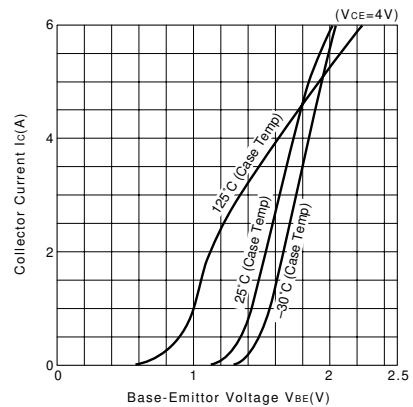
**I<sub>c</sub>-V<sub>CE</sub> Characteristics (Typical)**



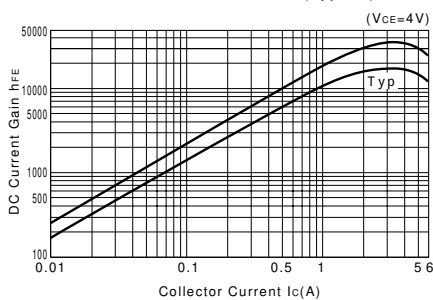
**V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)**



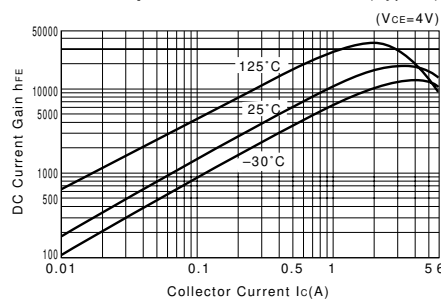
**I<sub>c</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)**



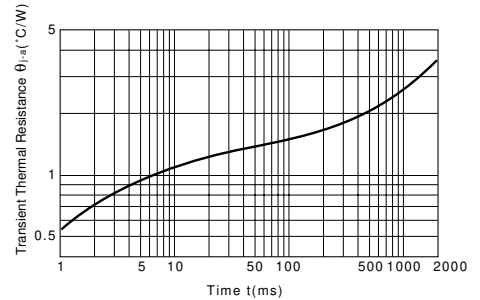
**h<sub>FE</sub>-I<sub>c</sub> Characteristics (Typical)**



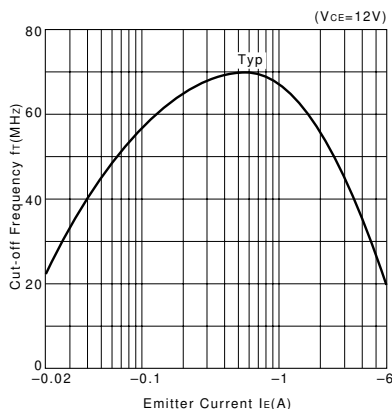
**h<sub>FE</sub>-I<sub>c</sub> Temperature Characteristics (Typical)**



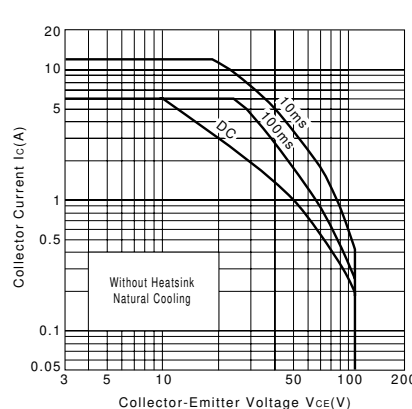
**θ<sub>J-a</sub>-t Characteristics**



**f<sub>T</sub>-I<sub>E</sub> Characteristics (Typical)**



**Safe Operating Area (Single Pulse)**



**P<sub>c</sub>-T<sub>a</sub> Derating**

