



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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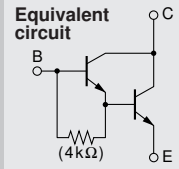
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# Darlington

# 2SD2017



**Silicon NPN Triple Diffused Planar Transistor**

**Application :** Driver for Solenoid, Relay and Motor and General Purpose

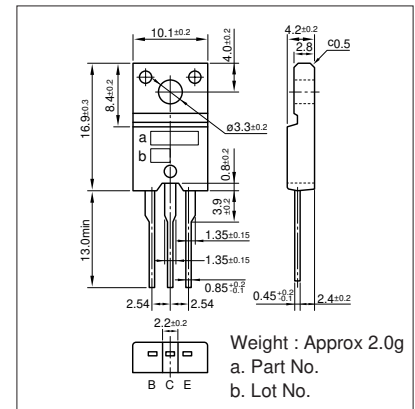
**Absolute maximum ratings** (Ta=25°C)

Symbol	Ratings	Unit
V <sub>CB0</sub>	300	V
V <sub>CEO</sub>	250	V
V <sub>EB0</sub>	20	V
I <sub>C</sub>	6	A
I <sub>B</sub>	1	A
P <sub>C</sub>	35(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> =300V	100max	μA
I <sub>EB0</sub>	V <sub>EB</sub> =20V	10max	mA
V <sub>(BR)CEO</sub>	I <sub>C</sub> =25mA	250min	V
h <sub>FE</sub>	V <sub>CE</sub> =2V, I <sub>C</sub> =2A	2000min	
V <sub>CE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =2mA	1.5max	V
V <sub>BE(sat)</sub>	I <sub>C</sub> =2A, I <sub>B</sub> =2mA	2.0max	V
f <sub>T</sub>	V <sub>CE</sub> =12V, I <sub>E</sub> =-1A	20typ	MHz
COB	V <sub>CB</sub> =10V, f=1MHz	65typ	pF

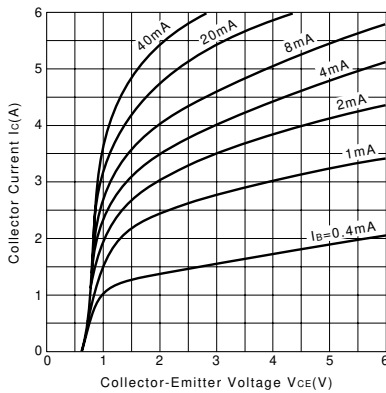
**External Dimensions FM20(TO220F)**



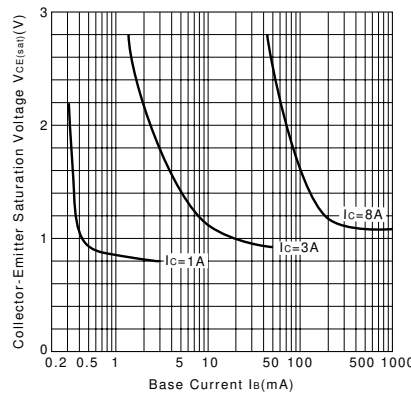
**Typical Switching Characteristics (Common Emitter)**

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)
100	50	2	10	-5	5	-10	0.6typ	16.0typ	3.0typ

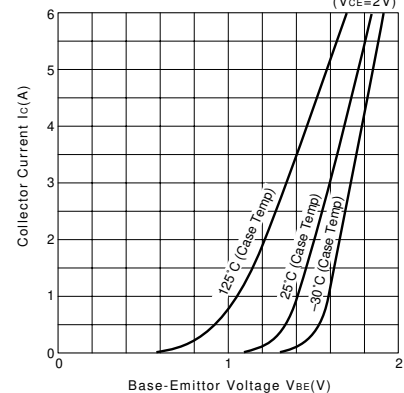
**I<sub>C</sub>-V<sub>CE</sub> Characteristics (Typical)**



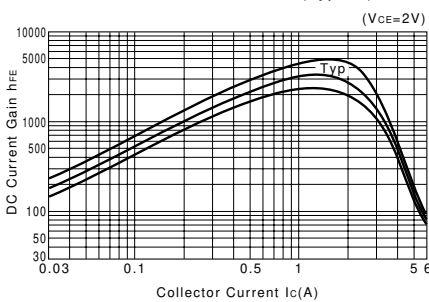
**V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)**



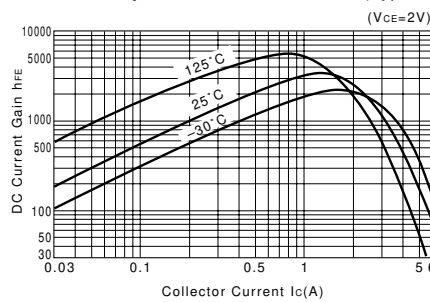
**I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)**



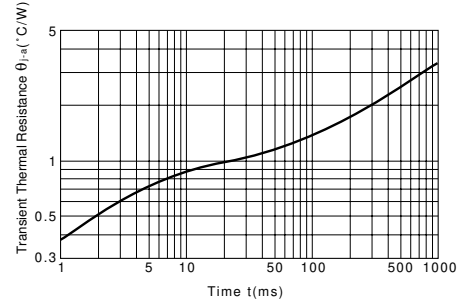
**h<sub>FE</sub>-I<sub>C</sub> Characteristics (Typical)**



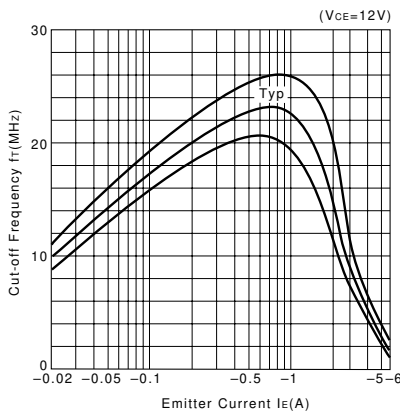
**h<sub>FE</sub>-I<sub>C</sub> Temperature Characteristics (Typical)**



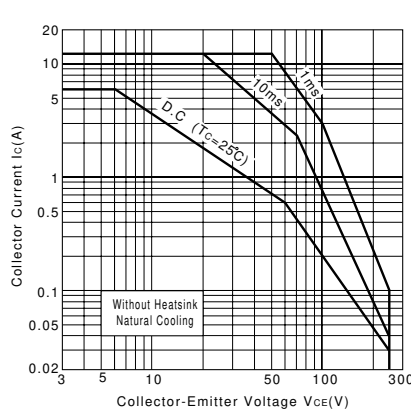
**θ<sub>j-a</sub>-t Characteristics**



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



**Safe Operating Area (Single Pulse)**



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

