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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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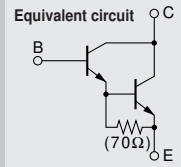
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# Darlington 2SD2390



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1560)

Application : Audio, Series Regulator and General Purpose

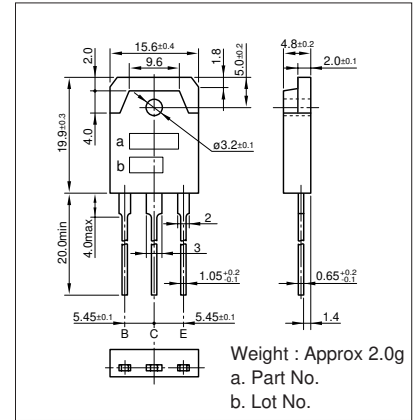
**Absolute maximum ratings** (Ta=25°C)

Symbol	Ratings	Unit
V <sub>CB0</sub>	160	V
V <sub>CE0</sub>	150	V
V <sub>EB0</sub>	5	V
I <sub>C</sub>	10	A
I <sub>B</sub>	1	A
P <sub>C</sub>	100(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> =160V	100max	μA
I <sub>EB0</sub>	V <sub>EB</sub> =5V	100max	μA
V <sub>(BR)CEO</sub>	I <sub>C</sub> =30mA	150min	V
h <sub>FE</sub>	V <sub>CE</sub> =4V, I <sub>C</sub> =7A	5000min*	
V <sub>CE(sat)</sub>	I <sub>C</sub> =7A, I <sub>B</sub> =7mA	2.5max	V
V <sub>BE(sat)</sub>	I <sub>C</sub> =7A, I <sub>B</sub> =7mA	3.0max	V
f <sub>T</sub>	V <sub>CE</sub> =12V, I <sub>E</sub> =-2A	55typ	MHz
COB	V <sub>CB</sub> =10V, f=1MHz	95typ	pF

**External Dimensions MT-100(TO3P)**

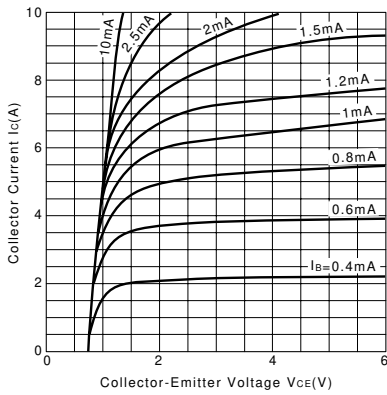


**Typical Switching Characteristics (Common Emitter)**

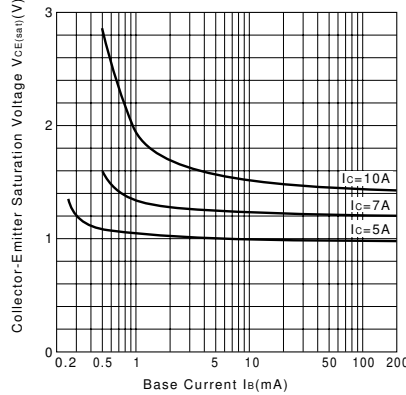
V <sub>CC</sub> (V)	R <sub>L</sub> (Ω)	I <sub>C</sub> (A)	V <sub>BB1</sub> (V)	V <sub>BB2</sub> (V)	I <sub>B1</sub> (mA)	I <sub>B2</sub> (mA)	t <sub>on</sub> (μs)	t <sub>stg</sub> (μs)	t <sub>f</sub> (μs)
70	10	7	10	-5	7	-7	0.5typ	10.0typ	1.1typ

\*h<sub>FE</sub> Rank  $\bar{O}$ (5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

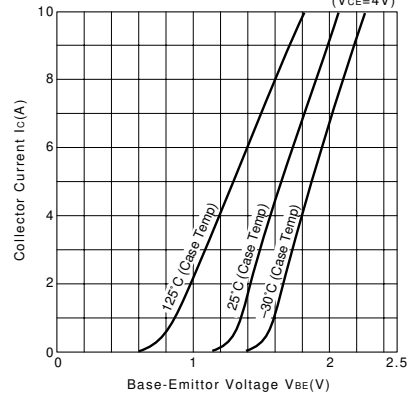
**I<sub>C</sub>-V<sub>CE</sub> Characteristics (Typical)**



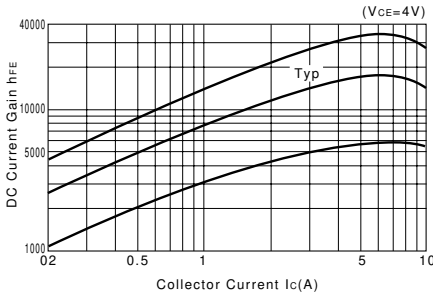
**V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)**



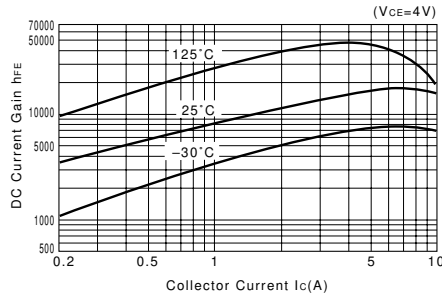
**I<sub>C</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)**



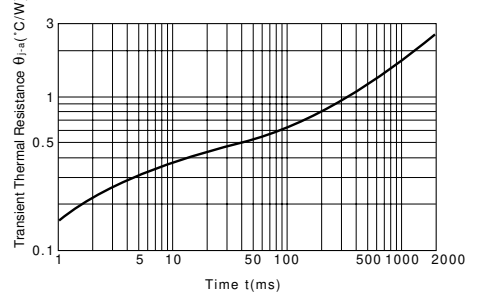
**h<sub>FE</sub>-I<sub>C</sub> Characteristics (Typical)**



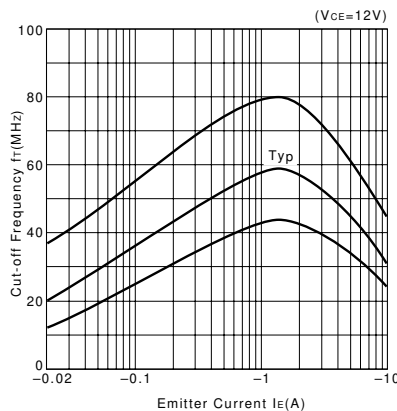
**h<sub>FE</sub>-I<sub>C</sub> Temperature Characteristics (Typical)**



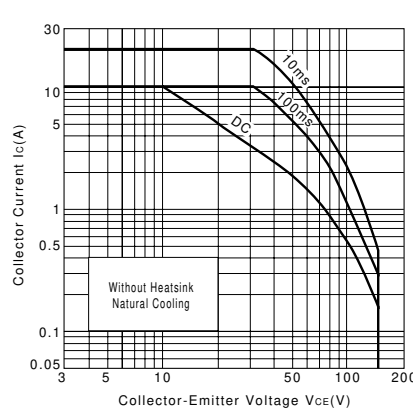
**θ<sub>j-a-t</sub> Characteristics**



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



**Safe Operating Area (Single Pulse)**



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

