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# LOW VCE (sat) 2SC4131

Silicon NPN Epitaxial Planar Transistor

Application : DC-DC Converter, Emergency Lighting Inverter and General Purpose

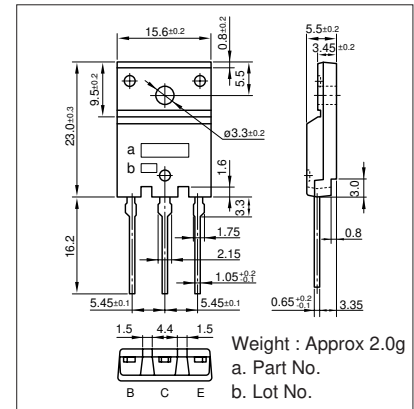
**Absolute maximum ratings** (Ta=25°C)

Symbol	Ratings	Unit
V <sub>CB0</sub>	100	V
V <sub>CEO</sub>	50	V
V <sub>EB0</sub>	15	V
I <sub>c</sub>	15(Pulse25)	A
I <sub>B</sub>	4	A
P <sub>c</sub>	60(Tc=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> =100V	10max	μA
I <sub>EB0</sub>	V <sub>EB</sub> =15V	10max	μA
V <sub>(BR)CEO</sub>	I <sub>c</sub> =25mA	50min	V
h <sub>FE</sub>	V <sub>CE</sub> =1V, I <sub>c</sub> =5A	60 to 360	
V <sub>CE(sat)</sub>	I <sub>c</sub> =5A, I <sub>B</sub> =80mA	0.5max	V
V <sub>BE(sat)</sub>	I <sub>c</sub> =5A, I <sub>B</sub> =80mA	1.2max	V
f <sub>t</sub>	V <sub>CE</sub> =12V, I <sub>E</sub> =-1A	18typ	MHz
C <sub>OB</sub>	V <sub>CB</sub> =10V, f=1MHz	210typ	pF

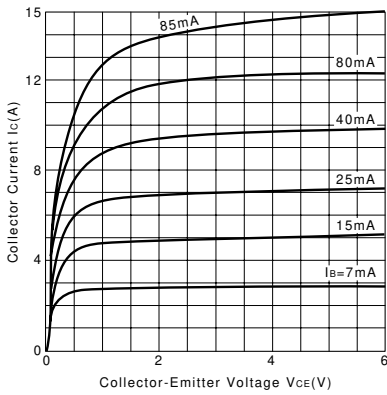
**External Dimensions FM100(TO3PF)**



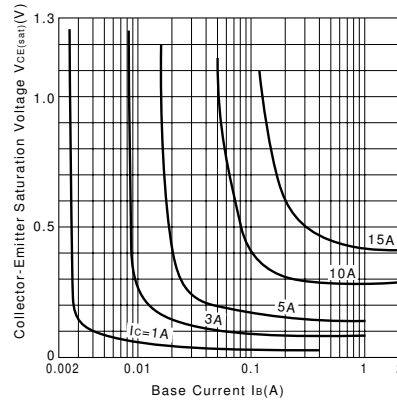
**Typical Switching Characteristics (Common Emitter)**

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> (A)	I <sub>B2</sub> (A)	t <sub>on</sub> (μs)	t <sub>stg</sub> (μs)	t <sub>f</sub> (μs)
20	4	5	10	-5	0.08	-0.08	0.5typ	2.0typ	0.4typ

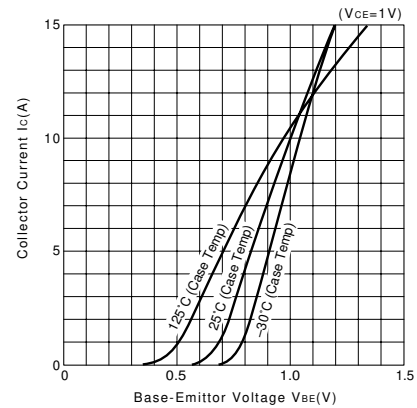
**I<sub>c</sub>-V<sub>CE</sub> Characteristics (Typical)**



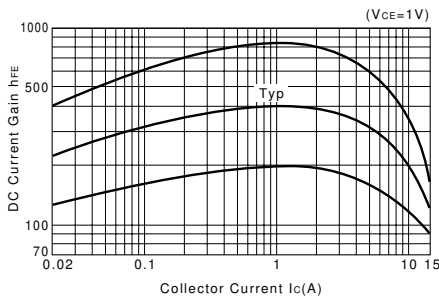
**V<sub>CE(sat)</sub>-I<sub>B</sub> Characteristics (Typical)**



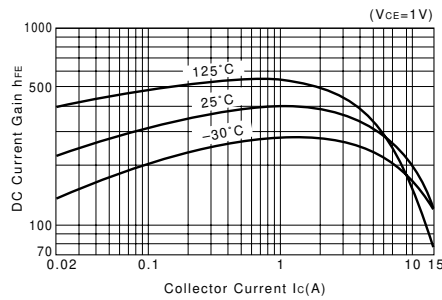
**I<sub>c</sub>-V<sub>BE</sub> Temperature Characteristics (Typical)**



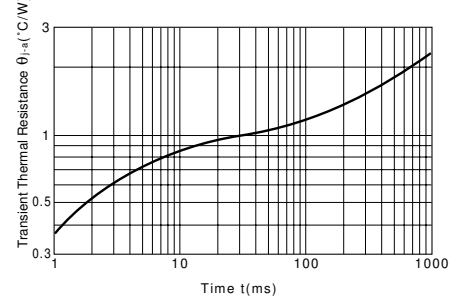
**h<sub>FE</sub>-I<sub>c</sub> Characteristics (Typical)**



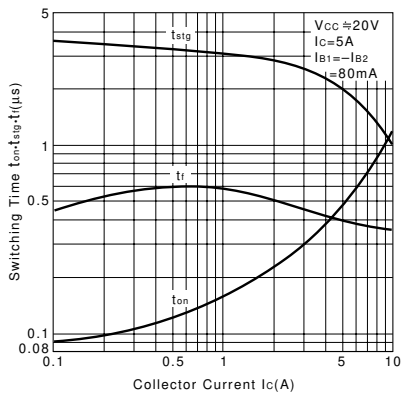
**h<sub>FE</sub>-I<sub>c</sub> Temperature Characteristics (Typical)**



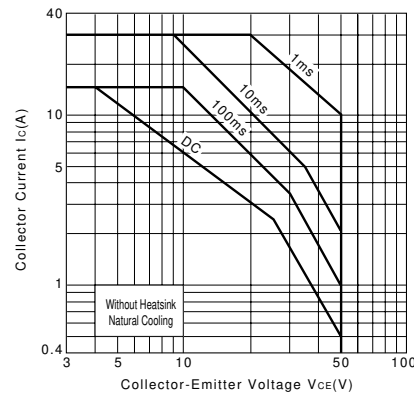
**θ<sub>j-a</sub>-t Characteristics**



**t<sub>on</sub>•t<sub>stg</sub>•t<sub>r</sub>-I<sub>c</sub> Characteristics (Typical)**



**Safe Operating Area (Single Pulse)**



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

