

LOW $V_{CE}(\text{sat})$

2SC4131

Silicon NPN Epitaxial Planar Transistor

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

Absolute maximum ratings ($T_a=25^\circ\text{C}$)

Symbol	Ratings	Unit
V_{CB0}	100	V
V_{CE0}	50	V
V_{EB0}	15	V
I_c	15(Pulse25)	A
I_B	4	A
P_c	60($T_c=25^\circ\text{C}$)	W
T_j	150	$^\circ\text{C}$
T_{stg}	-55 to +150	$^\circ\text{C}$

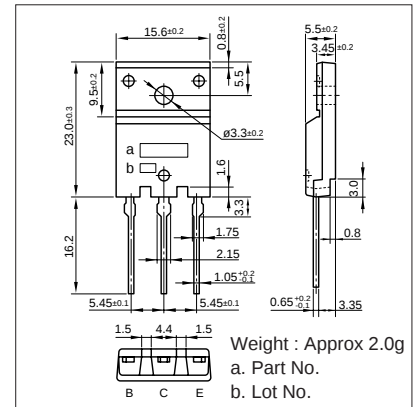
Electrical Characteristics ($T_a=25^\circ\text{C}$)

Symbol	Conditions	Ratings	Unit
I_{CBO}	$V_{CB}=100\text{V}$	10max	μA
I_{EBO}	$V_{EB}=15\text{V}$	10max	μA
$V_{(BR)CEO}$	$I_c=25\text{mA}$	50min	V
h_{FE}	$V_{CE}=1\text{V}$, $I_c=5\text{A}$	60 to 360	
$V_{CE}(\text{sat})$	$I_c=5\text{A}$, $I_B=80\text{mA}$	0.5max	V
$V_{BE}(\text{sat})$	$I_c=5\text{A}$, $I_B=80\text{mA}$	1.2max	V
f_r	$V_{CE}=12\text{V}$, $I_E=-1\text{A}$	18typ	MHz
C_{OB}	$V_{CB}=10\text{V}$, $f=1\text{MHz}$	210typ	pF

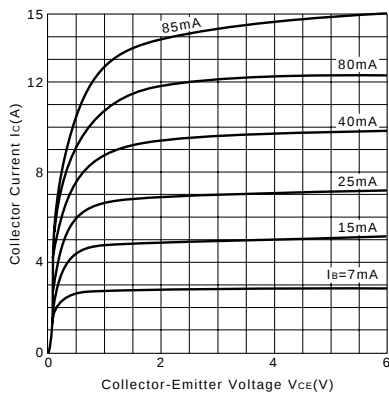
Typical Switching Characteristics (Common Emitter)

V_{CC} (V)	R_L (Ω)	I_c (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (A)	I_{B2} (A)	t_{on} (μs)	t_{stg} (μs)	t_f (μs)
20	4	5	10	-5	0.08	-0.08	0.5typ	2.0typ	0.4typ

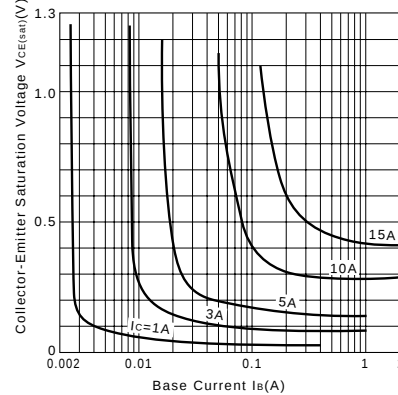
External Dimensions FM100(TO3PF)



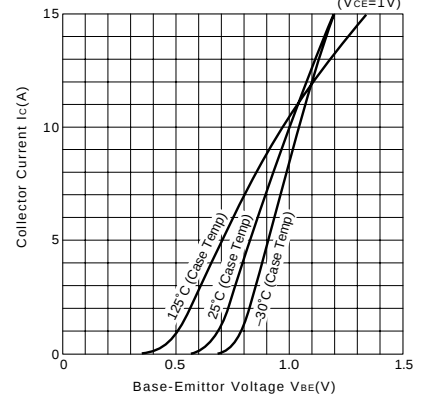
I_c-V_{CE} Characteristics (Typical)



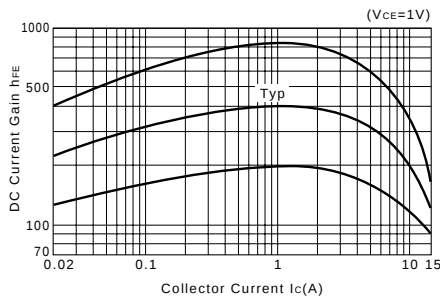
$V_{CE}(\text{sat})-I_B$ Characteristics (Typical)



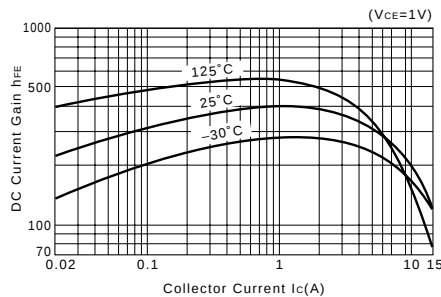
I_c-V_{BE} Temperature Characteristics (Typical)



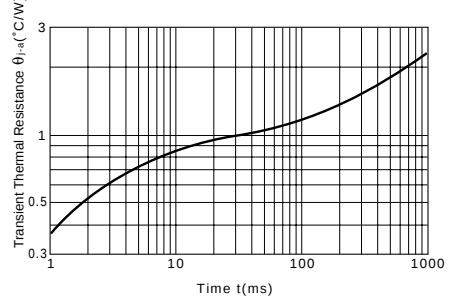
$h_{FE}-I_c$ Characteristics (Typical)



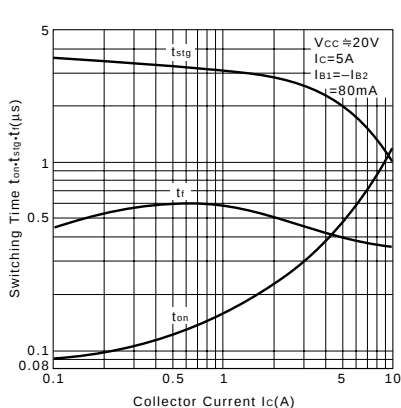
$h_{FE}-I_c$ Temperature Characteristics (Typical)



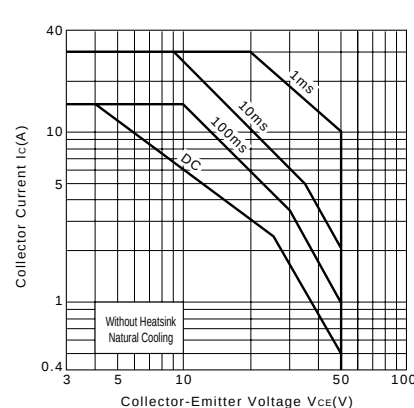
$\theta_{j-a}-t$ Characteristics



$t_{on} \cdot t_{stg} \cdot t_f-I_c$ Characteristics (Typical)



Safe Operating Area (Single Pulse)



P_c-T_a Derating

