

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

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_{CB0}	100	V
V_{CE0}	50	V
V_{EB0}	15	V
I_C	15(Pulse25)	A
I_B	4	A
P_C	60(Tc=25°C)	W
T_J	150	°C
T_{stg}	-55 to +150	°C

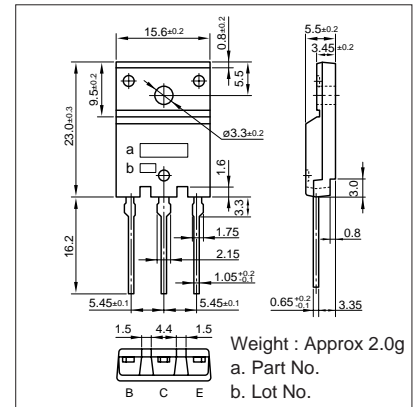
Electrical Characteristics (Ta=25°C)

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

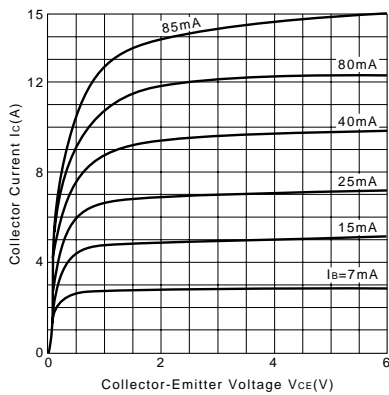
Typical Switching Characteristics (Common Emitter)

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

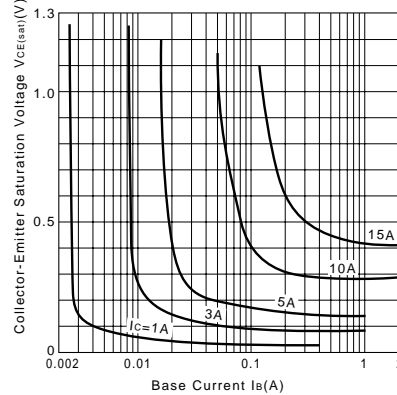
External Dimensions FM100(TO3PF)



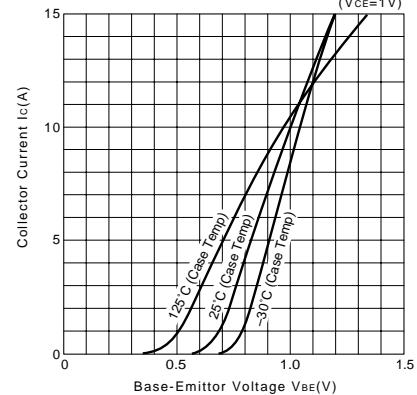
I_C-V_{CE} Characteristics (Typical)



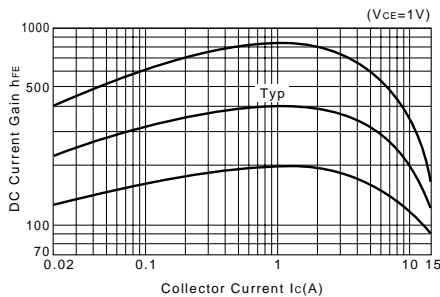
$V_{CE(sat)}-I_B$ Characteristics (Typical)



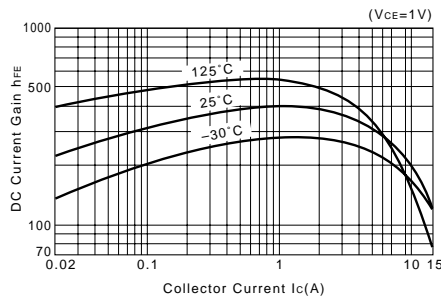
I_C-V_{BE} Temperature Characteristics (Typical)



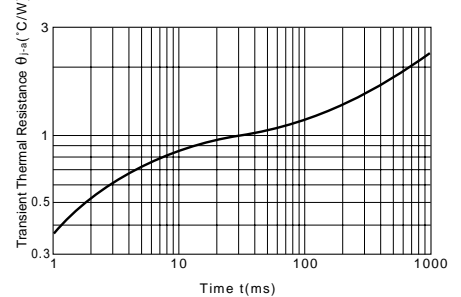
$h_{FE}-I_C$ Characteristics (Typical)



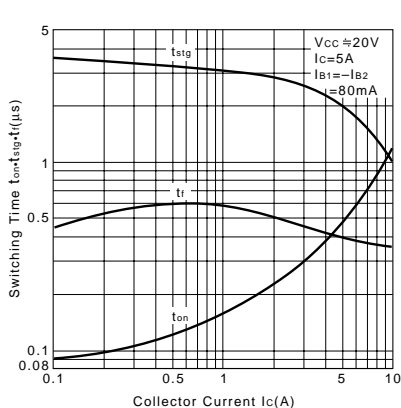
$h_{FE}-I_C$ Temperature Characteristics (Typical)



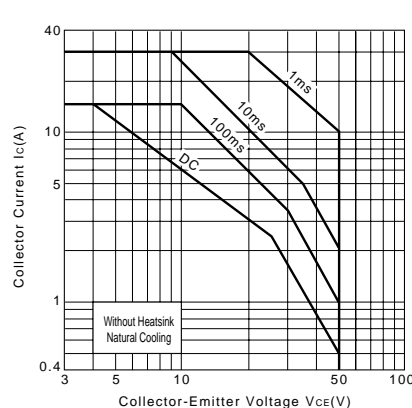
$\theta_{j-a}-t$ Characteristics



$t_{on} \cdot t_{stg} \cdot t_r - I_C$ Characteristics (Typical)



Safe Operating Area (Single Pulse)



P_C-Ta Derating

