

2SC3831

Silicon NPN Triple Diffused Planar Transistor (High Voltage and High Speed Switching Transistor)

Application : Switching Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

Symbol	2SC3831	Unit
V _{CB0}	600	V
V _{CE0}	500	V
V _{EB0}	10	V
I _c	10(Pulse20)	A
I _B	4	A
P _c	100(Tc=25°C)	W
T _J	150	°C
T _{stg}	-55 to +150	°C

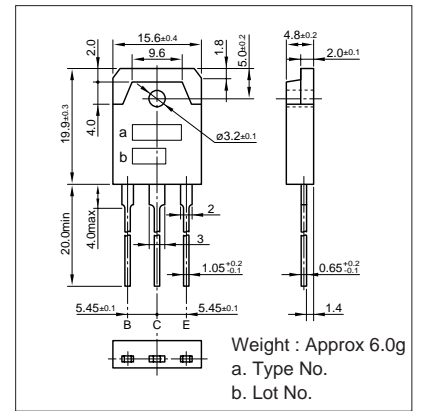
Electrical Characteristics (Ta=25°C)

Symbol	Conditions	2SC3831	Unit
I _{CB0}	V _{CB} =600V	1max	mA
I _{EB0}	V _{EB} =10V	100max	μA
V _{(BR)CEO}	I _c =25mA	500min	V
h _{FE}	V _{CE} =4V, I _c =5A	10to30	
V _{CE(sat)}	I _c =5A, I _B =1A	0.5max	V
V _{BE(sat)}	I _c =5A, I _B =1A	1.3 max	V
f _r	V _{CE} =12V, I _E =-1A	8typ	MHZ
COB	V _{CB} =10V, f=1MHZ	105typ	pF

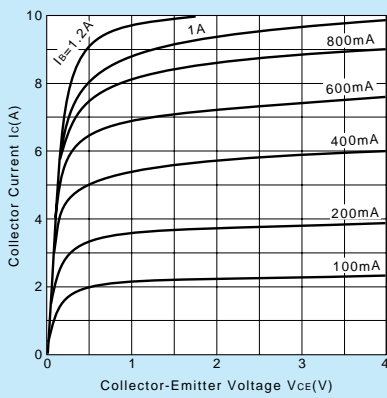
Typical Switching Characteristics (Common Emitter)

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)
200	40	5	10	-5	0.5	-1.0	1max	4.5max	0.5max

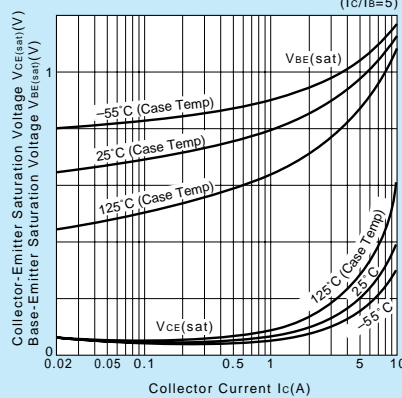
External Dimensions MT-100(TO3P)



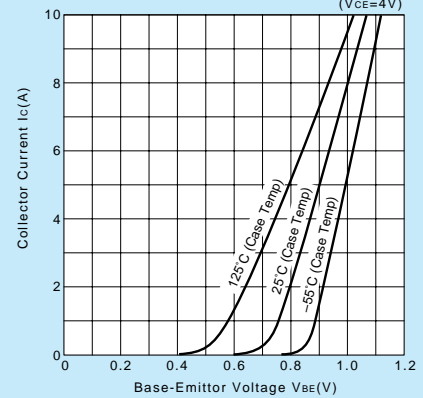
I_c-V_{CE} Characteristics (Typical)



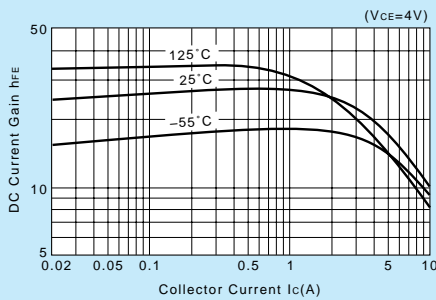
V_{CE(sat)}, V_{BE(sat)}-I_c Temperature Characteristics (Typical)



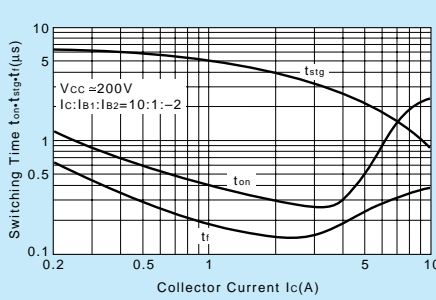
I_c-V_{BE} Temperature Characteristics (Typical)



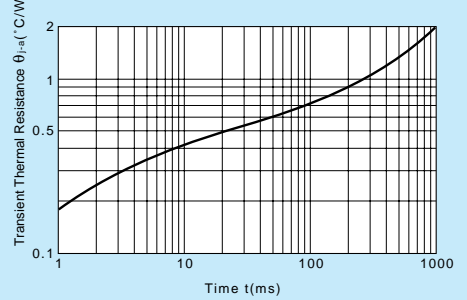
h_{FE}-I_c Characteristics (Typical)



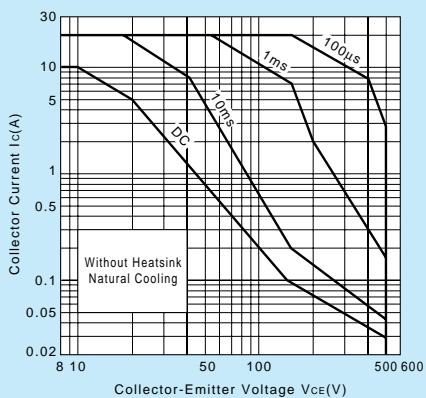
t_{on}*t_{stg}*t_f-I_c Characteristics (Typical)



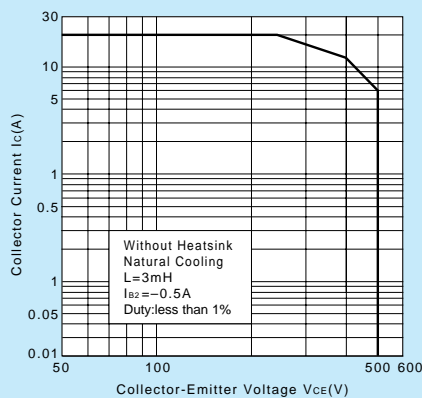
θ_{j-a}-t Characteristics



Safe Operating Area (Single Pulse)



Reverse Bias Safe Operating Area



P_c-T_a Derating

