2SC4140

Silicon NPN Triple Diffused Planar Transistor (High Voltage and High Speed Switchihg Transistor) **Application :** Switching Regulator and General Purpose

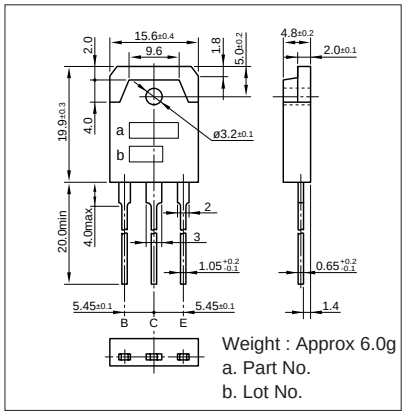
■Absolute maximum ratings (Ta=25°C)

Symbol	Ratings	Unit
V_{CBO}	500	V
V_{CEO}	400	V
V_{EBO}	10	V
I_C	18(Pulse36)	A
I_B	6	A
P_C	130(Tc=25°C)	W
Tj	150	°C
Tstg	–55 to +150	°C

■Electrical Characteristics (Ta=25°C)

Symbol	Conditions	Ratings	Unit
I_{CBO}	V_{CB}=500V	100max	μA
I_{EBO}	V_{EB}=10V	100max	μA
$V_{(BR)CEO}$	I_C=25mA	400min	V
h_{FE}	V_{CE}=4V, I_C=10A	10to30	
$V_{CE(sat)}$	I_C=10A, I_B=2A	0.5max	V
$V_{BE(sat)}$	I_C=10A, I_B=2A	1.3max	V
f_T	V_{CE}=12V, I_E=–2.0A	10typ	MHz
C_{OB}	V_{CB}=10V, f=1MHz	165typ	pF

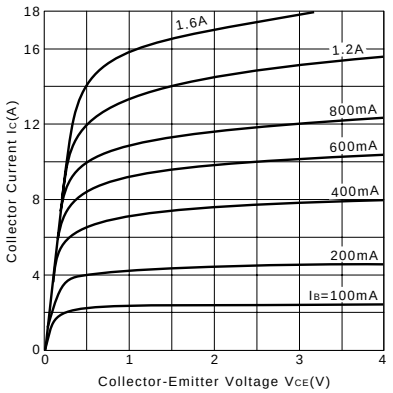
External Dimensions MT-100(TO3P)



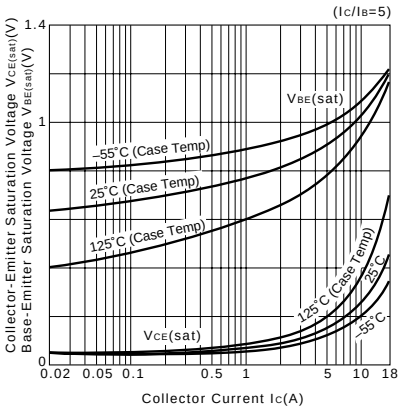
■Typical Switching Characteristics (Common Emitter)

V_{CC} (V)	R_L (Ω)	I_C (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (A)	I_{B2} (A)	ton (μs)	tstg (μs)	tf (μs)
200	20	10	10	–5	1	–2	1max	3max	0.5max

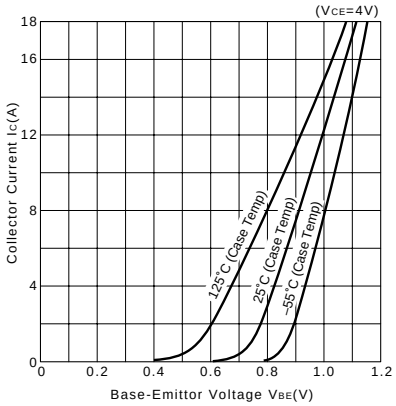
I_C–V_{CE} Characteristics (Typical)



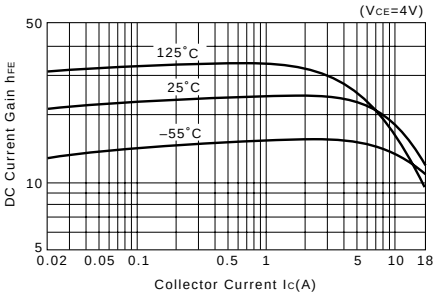
$V_{CE(sat)}$,$V_{BE(sat)}$–I_C Temperature Characteristics (Typical)



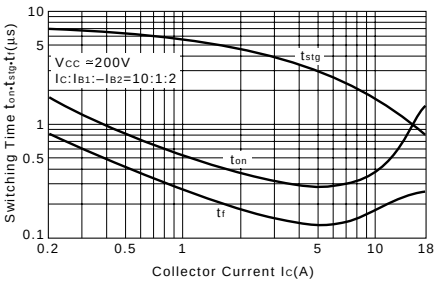
I_C–V_{BE} Temperature Characteristics (Typical)



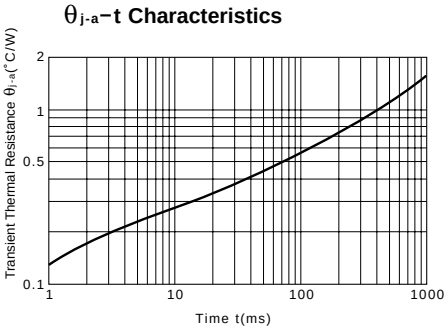
h_{FE}–I_C Characteristics (Typical)



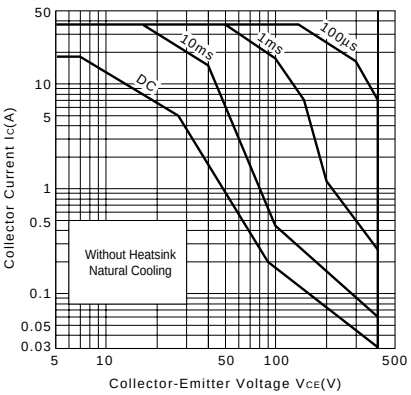
t_{on}•t_{stg}•t_f–I_C Characteristics (Typical)



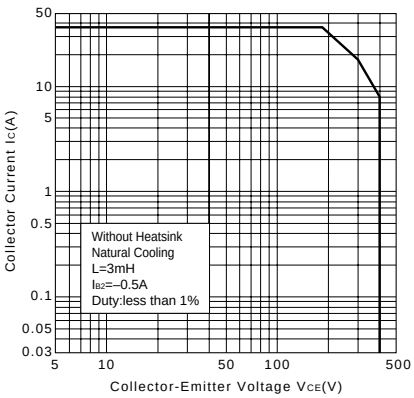
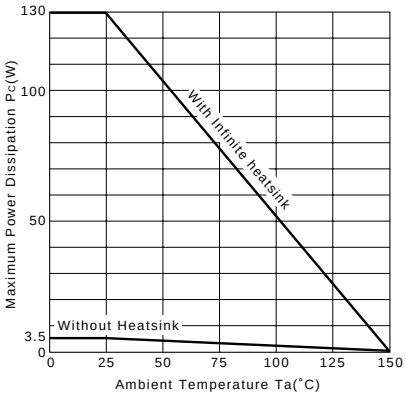
$\theta_{j\text{-}a}$–t Characteristics



Safe Operating Area (Single Pulse)



Reverse Bias Safe Operating Area



Pc–Ta Derating