

2SC3680

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

Application : Switching Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

| Symbol | 2SC3680 | Unit |
|------------------|---------------------------|------|
| V _{CB0} | 900 | V |
| V _{CEO} | 800 | V |
| V _{EB0} | 7 | V |
| I _c | 7(Pulse14) | A |
| I _B | 3.5 | A |
| P _c | 120(T _c =25°C) | W |
| T _J | 150 | °C |
| T _{stg} | -55 to +150 | °C |

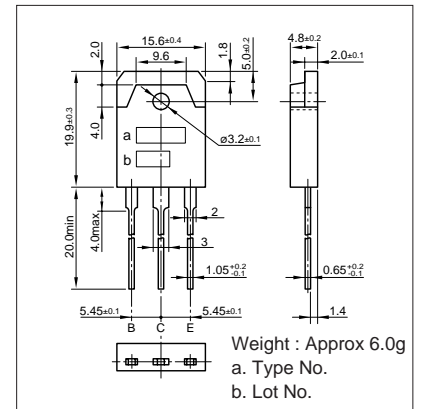
Electrical Characteristics (Ta=25°C)

| Symbol | Conditions | 2SC3680 | Unit |
|----------------------|---|---------|------|
| I _{CB0} | V _{CB} =800V | 100max | μA |
| I _{EB0} | V _{EB} =7V | 100max | μA |
| V _{(BR)CEO} | I _c =10mA | 800min | V |
| h _{FE} | V _{CE} =4V, I _c =3A | 10to30 | |
| V _{CE(sat)} | I _c =3A, I _B =0.6A | 0.5max | V |
| V _{BE(sat)} | I _c =3A, I _B =0.6A | 1.2max | V |
| f _r | V _{CE} =12V, I _E =-2A | 6typ | MHZ |
| COB | V _{CB} =10V, f=1MHZ | 105typ | pF |

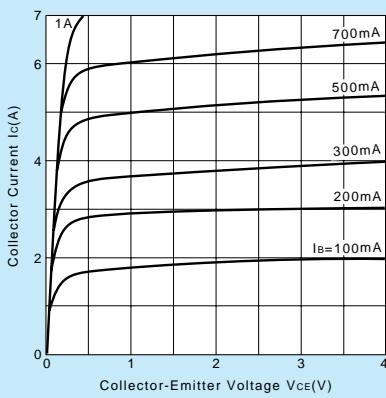
Typical Switching Characteristics (Common Emitter)

| 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) |
|---------------------|--------------------|--------------------|----------------------|----------------------|---------------------|---------------------|----------------------|-----------------------|---------------------|
| 250 | 83 | 3 | 10 | -5 | 0.45 | -1.5 | 1max | 5max | 1max |

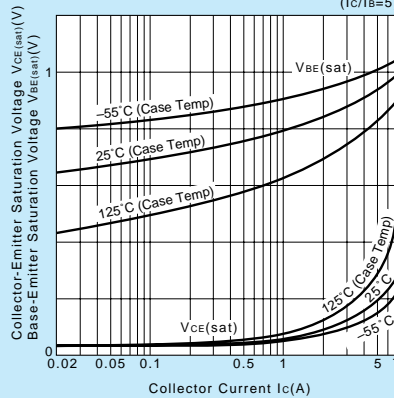
External Dimensions MT-100(TO3P)



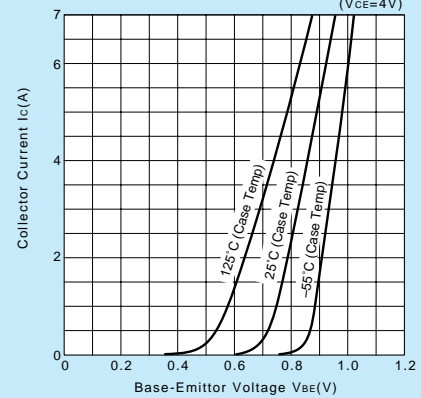
I_c-V_{CE} Characteristics (Typical)



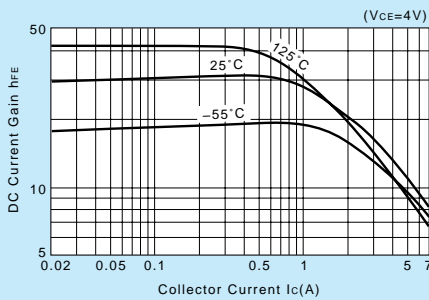
V_{CE(sat)}, V_{BE(sat)}-I_c Temperature Characteristics (Typical)



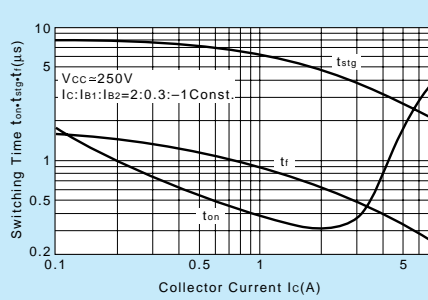
I_c-V_{BE} Temperature Characteristics (Typical)



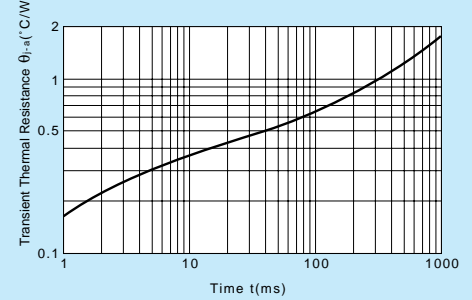
h_{FE}-I_c Characteristics (Typical)



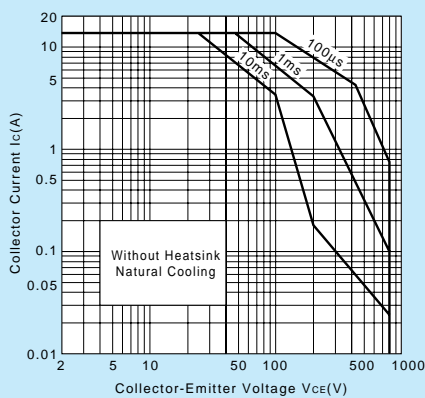
t_{on}•t_{stg}•t_f-I_c Characteristics (Typical)



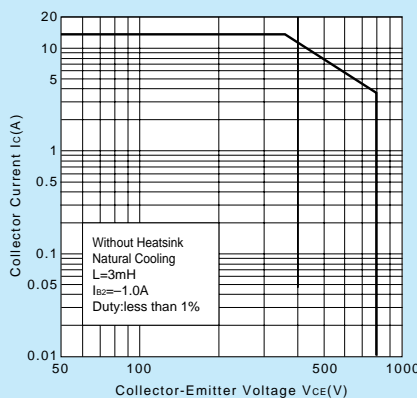
θ_{j-a}-t Characteristics



Safe Operating Area (Single Pulse)



Reverse Bias Safe Operating Area



P_c-T_a Derating

