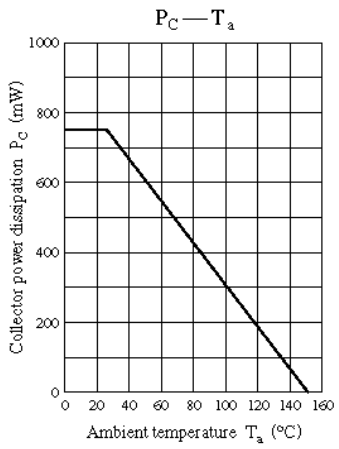
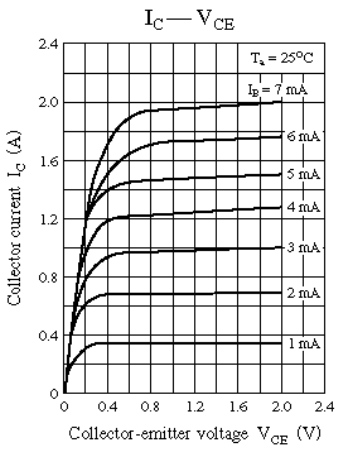
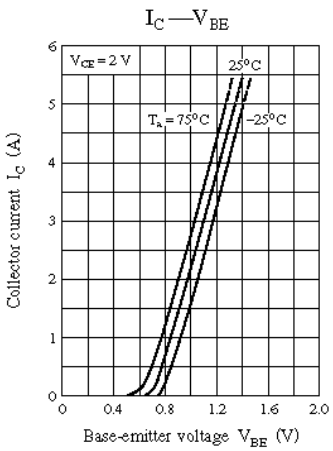
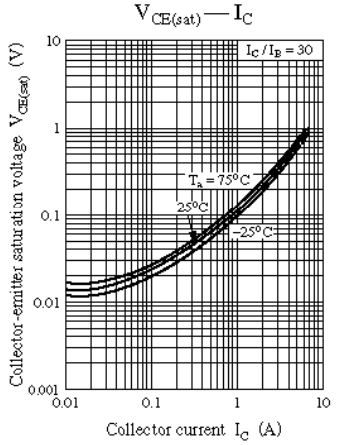
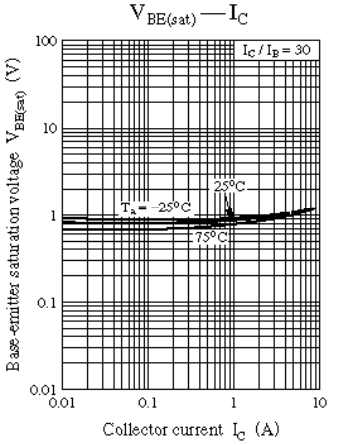
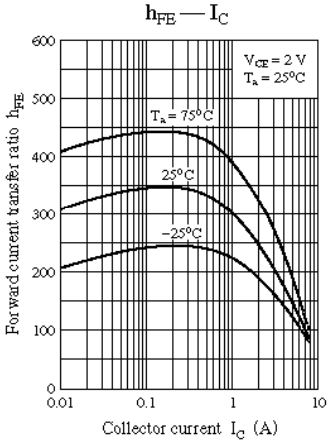

P_C — T_a
Collector power dissipation P_C (mW)
1000
800
600
400
200
0
0 20 40 60 80 100 120 140 160
Ambient temperature T_a (°C)

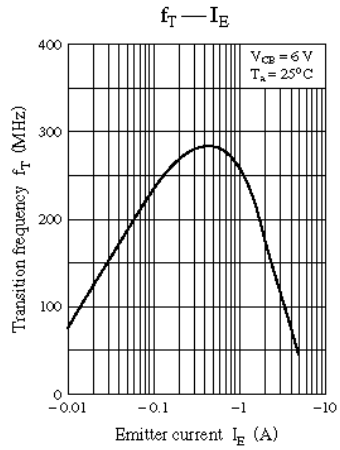

I_C — V_{CE}
T_a = 25°C
I_B = 7 mA
6 mA
5 mA
4 mA
3 mA
2 mA
1 mA
Collector current I_C (A)
2.4
2.0
1.6
1.2
0.8
0.4
0
0 0.4 0.8 1.2 1.6 2.0 2.4
Collector-emitter voltage V_{CE} (V)

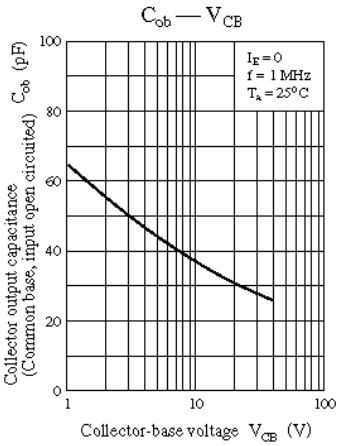

I_C — V_{BE}
V_{CE} = 2 V
25°C
T_a = 75°C
−25°C
Collector current I_C (A)
6
5
4
3
2
1
0
0 0.4 0.8 1.2 1.6 2.0
Base-emitter voltage V_{BE} (V)

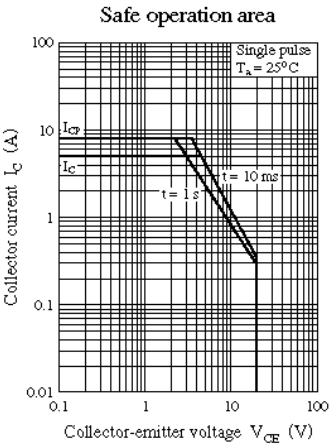

$V_{CE(sat)}$ — I_C
I_C / I_B = 30
T_a = 75°C
25°C
−25°C
Collector-emitter saturation voltage $V_{CE(sat)}$ (V)
10
1
0.1
0.01
0.001
0.01 0.1 1 10
Collector current I_C (A)


$V_{BE(sat)}$ — I_C
I_C / I_B = 30
T_a = −25°C
25°C
75°C
Base-emitter saturation voltage $V_{BE(sat)}$ (V)
100
10
1
0.1
0.01
0.01 0.1 1 10
Collector current I_C (A)


h_{FE} — I_C
V_{CE} = 2 V
T_a = 25°C
T_a = 75°C
25°C
−25°C
Forward current transfer ratio h_{FE}
600
500
400
300
200
100
0
0.01 0.1 1 10
Collector current I_C (A)


f_T — I_E
V_{CB} = 6 V
T_a = 25°C
Transition frequency f_T (MHz)
400
300
200
100
0
−0.01 −0.1 −1 −10
Emitter current I_E (A)


C_{ob} — V_{CB}
I_E = 0
f = 1 MHz
T_a = 25°C
Collector output capacitance (Common base, input open circuited) C_{ob} (pF)
100
80
60
40
20
0
1 10 100
Collector-base voltage V_{CB} (V)


Safe operation area
Single pulse
T_a = 25°C
I_{CP}
I_C
t = 10 ms
t = 1 s
Collector current I_C (A)
100
10
1
0.1
0.01
0.1 1 10 100
Collector-emitter voltage V_{CE} (V)

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