

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS (1)					
Collector-Emitter Sustaining Voltage ($I_C = 50 \text{ mA}$, $I_B = 0$)	$V_{CE(sus)}$	400	—	—	Vdc
Collector Cutoff Current ($V_{CE} = 950 \text{ Vdc}$, $V_{BE} = 0$)	I_{CES}	—	—	1.0	mA
Emitter Cutoff Current ($V_{BE} = 5.0 \text{ Vdc}$, $I_C = 0$)	I_{EBO}	—	—	1.0	mA
ON CHARACTERISTICS (1)					
Collector-Emitter Saturation Voltage ($I_C = 5.0 \text{ Adc}$, $I_B = 1.2 \text{ Adc}$)	$V_{CE(sat)}$	—	—	5.0	Vdc
Base-Emitter Saturation Voltage ($I_C = 5.0 \text{ Adc}$, $I_B = 1.2 \text{ Adc}$)	$V_{BE(sat)}$	—	—	1.5	Vdc
Second Breakdown Collector Current with Base Forward Biased	$I_{S/B}$	See Figure 5			—
DYNAMIC CHARACTERISTICS					
Current-Gain — Bandwidth Product ($I_C = 0.1 \text{ Adc}$, $V_{CE} = 5.0 \text{ Vdc}$, $f_{test} = 1.0 \text{ MHz}$)	f_T	—	6.0	—	MHz
Output Capacitance ($V_{CB} = 10 \text{ Vdc}$, $I_E = 0$, $f = 0.1 \text{ MHz}$)	C_{ob}	—	150	—	pF
SWITCHING CHARACTERISTICS					
Fall Time ($I_C = 5.0 \text{ Adc}$, $I_{B1} = 1.2 \text{ Adc}$, $L_B = 8.0 \mu\text{H}$, See Figure 1)	t_f	—	0.5	1.0	μs

(1) Pulse Test: Pulse Width $< 300 \mu\text{s}$, Duty Cycle = 2%.

FIGURE 2 — DC CURRENT GAIN

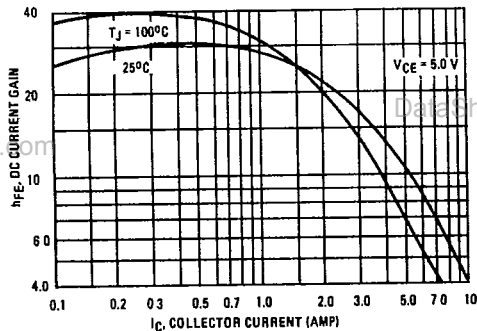


FIGURE 4 — "ON" VOLTAGES

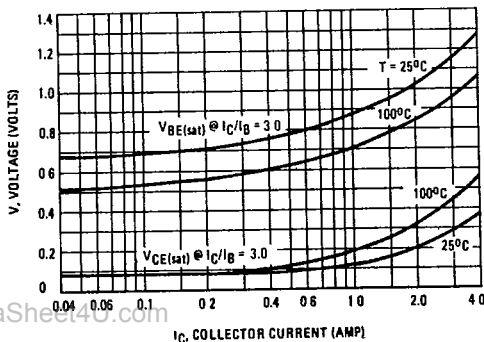


FIGURE 3 — COLLECTOR SATURATION REGION

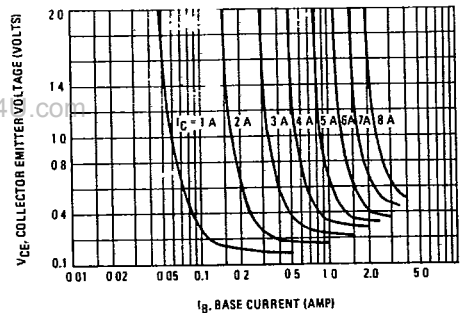
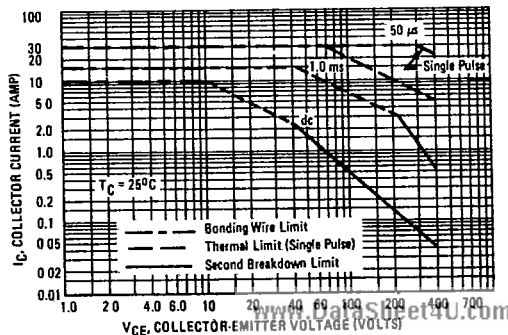


FIGURE 5 — MAXIMUM FORWARD BIAS SAFE OPERATING AREA



NOTE:

There are two limitations on the power handling ability of a transistor: average junction temperature and second breakdown. Safe operating area curves indicate $I_C - V_{CE}$ limits of the transistor that must be observed for reliable operation; i.e., the transistor must not be subjected to greater dissipation than the curves indicate.

The 50 μs and 1 ms curves are beyond the thermal limits of this part. However, the parts will survive a transient that remains within these SB limits without failing.