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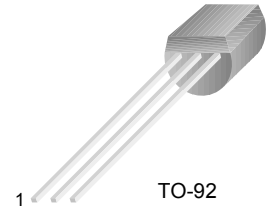
FAIRCHILD SEMICONDUCTOR®

August 2010

2N6517
NPN Epitaxial Silicon Transistor

Features

- High Voltage Transistor
- Collector Dissipation: P_C(max) = 625mW
- Complement to 2N6520
- Suffix “-C” means Center Collector (1. Emitter 2. Collector 3. Base)



TO-92

1. Emitter 2. Base 3. Collector

Absolute Maximum Ratings T_a = 25°C unless otherwise noted

Symbol	Parameter		Value	Units
V_{CBO}	Collector-Base Voltage	2N6517 2N6517C	350 400	V V
V_{CEO}	Collector-Emitter Voltage	2N6517 2N6517C	350 400	V V
V_{EBO}	Emitter-Base Voltage		6	V
I_C	Collector Current		500	mA
P_C	Collector Power Dissipation		625	mW
T_J	Junction Temperature		150	°C
T_{STG}	Storage Temperature		-55 ~ 150	°C

Electrical Characteristics T_a = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
BV_{CBO}	Collector-Base Breakdown Voltage				
	2N6517	I_C = 100μA, I_E = 0	350		V
	2N6517C	I_C = 100μA, I_E = 0	400		V
BV_{CEO}	Collector-Emitter Breakdown Voltage *				
	2N6517	I_C = 1mA, I_B = 0	350		V
	2N6517C	I_C = 1mA, I_B = 0	400		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 10μA, I_C = 0	6		V
I_{CBO}	Collector Cut-off Current	V_{CB} = 250V, I_E = 0		50	nA
I_{EBO}	Emitter Cut-off Current	V_{EB} = 5V, I_C = 0		50	nA
h_{FE}	DC Current Gain *				
	2N6517/2N6517C	V_{CE} = 10V, I_C = 1mA	20		
	2N6517/2N6517C	V_{CE} = 10V, I_C = 10mA	30		
	2N6517/2N6517C	V_{CE} = 10V, I_C = 30mA	30	200	
	2N6517/2N6517C	V_{CE} = 10V, I_C = 50mA	20	200	
	2N6517/2N6517C	V_{CE} = 10V, I_C = 100mA	15		
	2N6517C	V_{CE} = 10V, I_C = 5mA	50	200	

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Electrical Characteristics (Continued) T_a = 25°C unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	I_C = 10mA, I_B = 1mA I_C = 20mA, I_B = 2mA I_C = 30mA, I_B = 3mA I_C = 50mA, I_B = 5mA		0.3 0.35 0.5 1	V V V V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	I_C = 10mA, I_B = 1mA I_C = 20mA, I_B = 2mA I_C = 30mA, I_B = 3mA		0.75 0.85 0.9	V V V
C_{ob}	Output Capatitance	V_{CB} = 20V, I_E = 0, f = 1MHz		6	pF
f_T	Current Gain Bandwidth Product *	I_C = 10mA, V_{CE} = 20V, f = 20MHz	40	200	MHz
$V_{BE(on)}$	Base-Emitter On Voltage	I_C = 100mA, V_{CE} = 10V		2	V

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%

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Typical Performance Characteristics

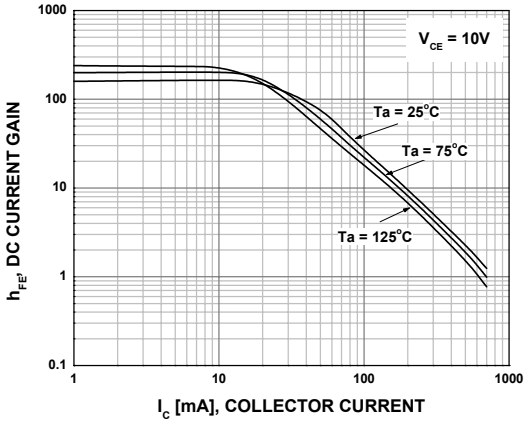

Figure 1. DC Current Gain

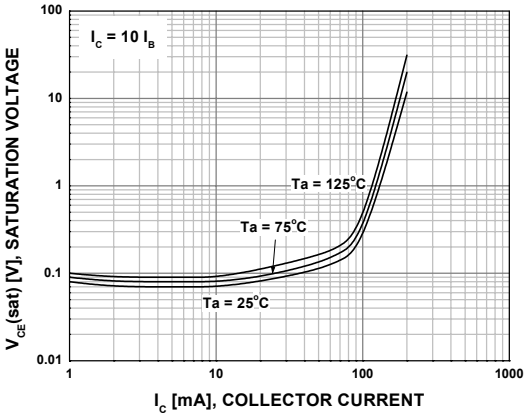

Figure 2. Saturation Voltage

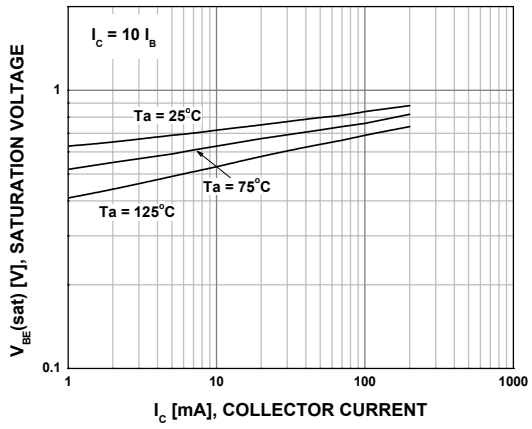

Figure 3. Saturation Voltage

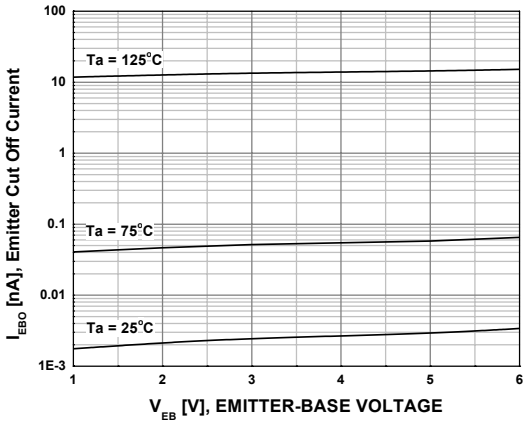

Figure 4. Emitter Cut Off Current

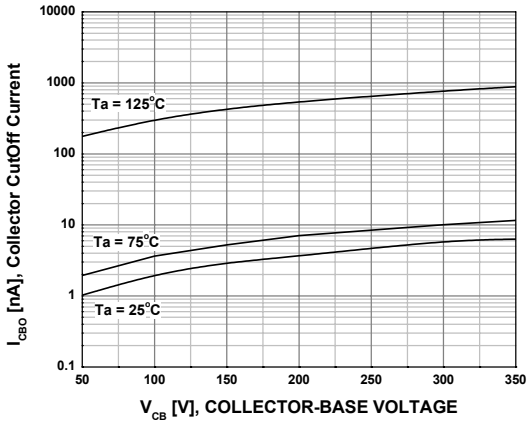

Figure 5. Collector CutOff Current

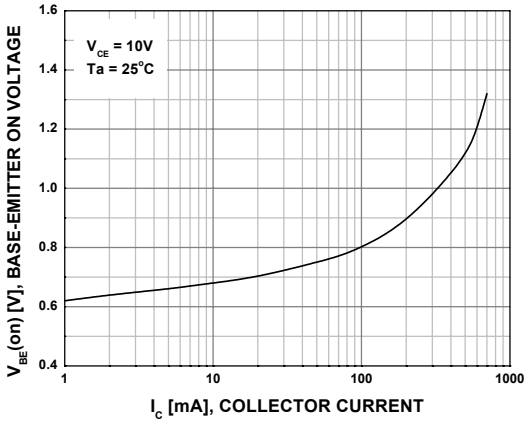

Figure 6. Base-Emitter On Voltage

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Typical Performance Characteristics (Continued)

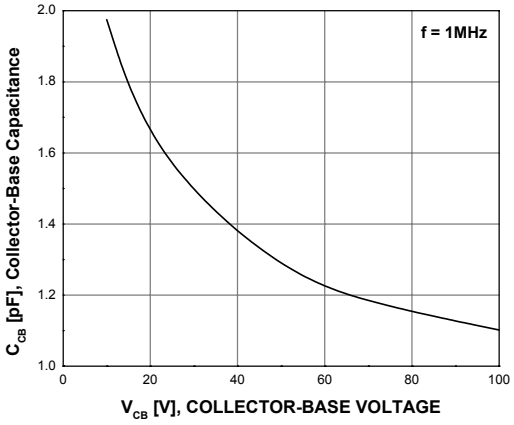

Figure 7. Output Capacitance

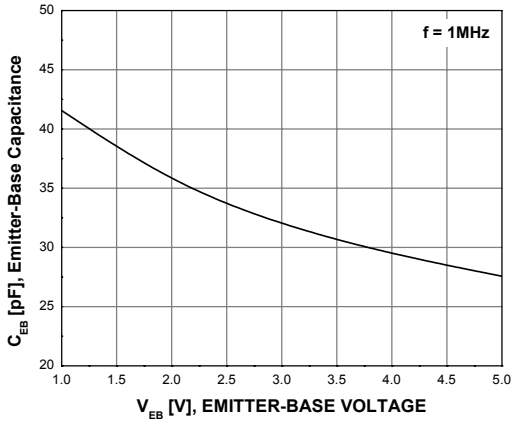

Figure 8. Input Capacitance

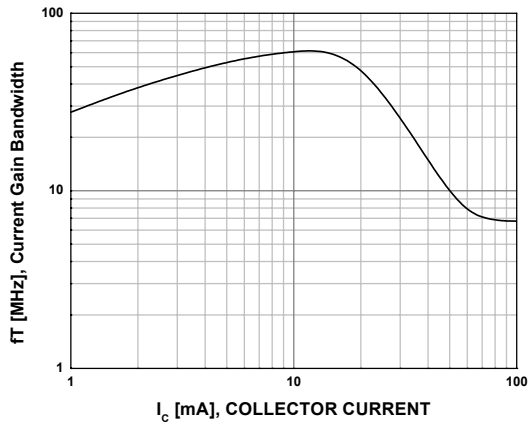

Figure 9. Current Gain Bandwidth Product

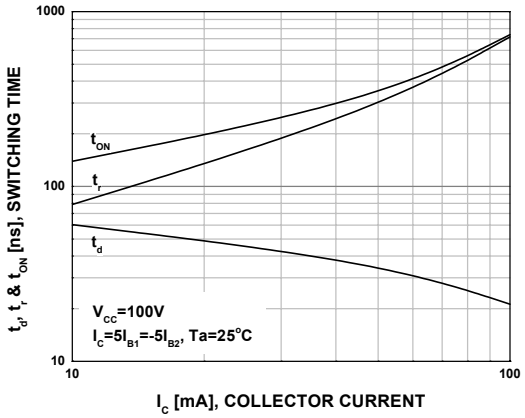

Figure 10. Resistive Load Switching

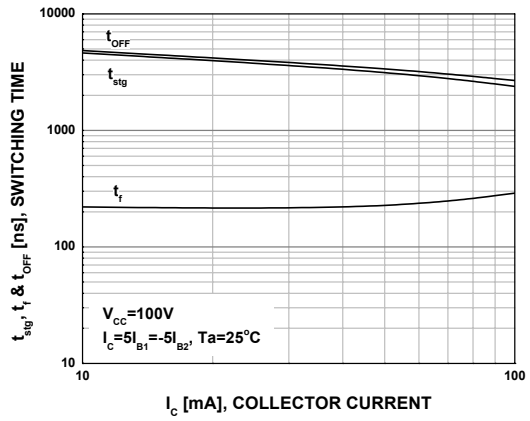

Figure 11. Resistive Load Switching

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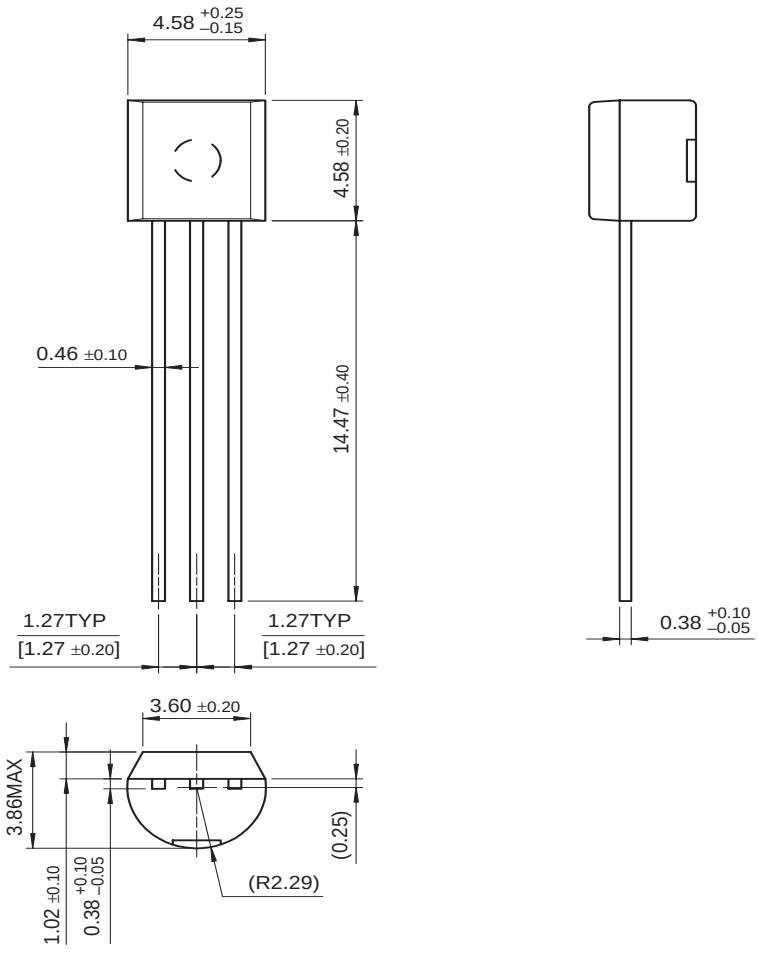
Physical Dimensions

TO-92



Dimensions in Millimeters

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