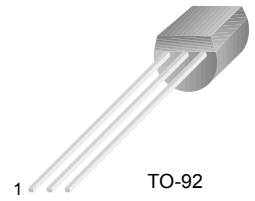
FAIRCHILD SEMICONDUCTOR®

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	

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%

Typical Performance Characteristics

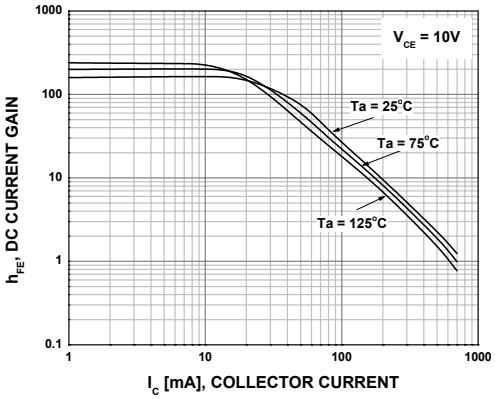


Figure 1. DC Current Gain

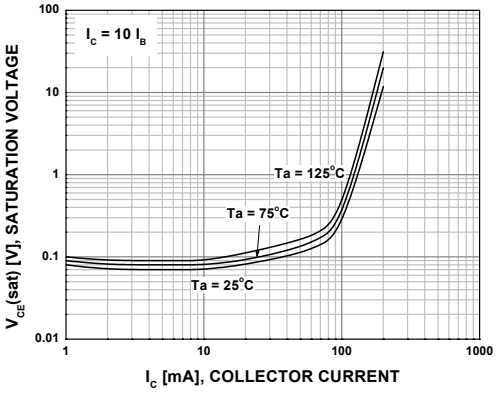


Figure 2. Saturation Voltage

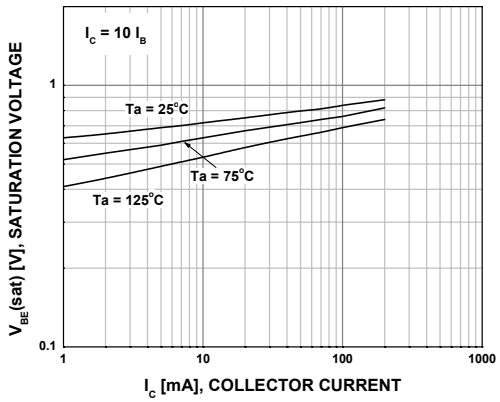


Figure 3. Saturation Voltage

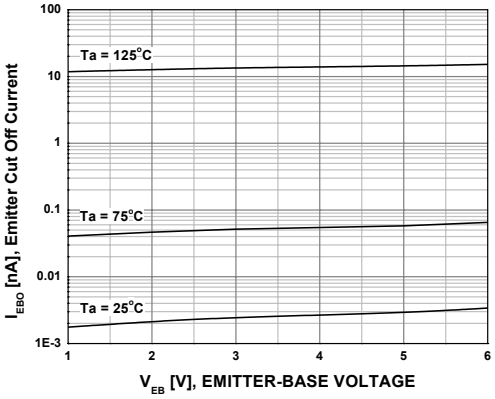


Figure 4. Emitter Cut Off Current

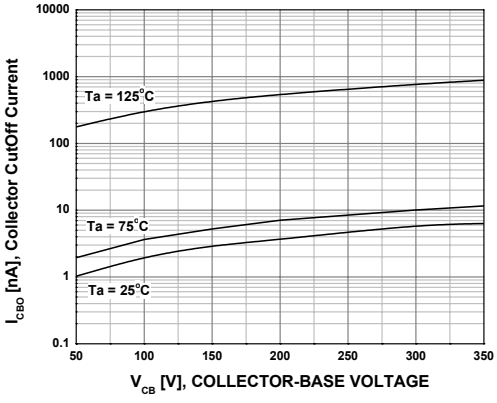


Figure 5. Collector CutOff Current

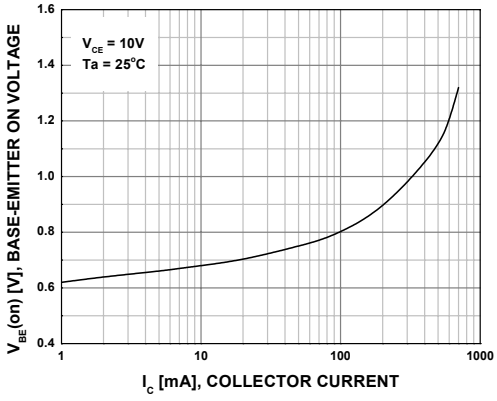


Figure 6. Base-Emitter On Voltage

Typical Performance Characteristics (Continued)

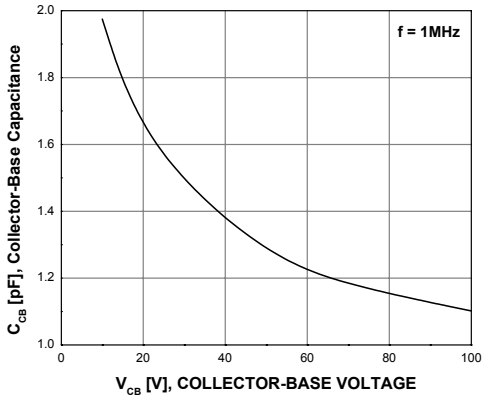


Figure 7. Output Capacitance

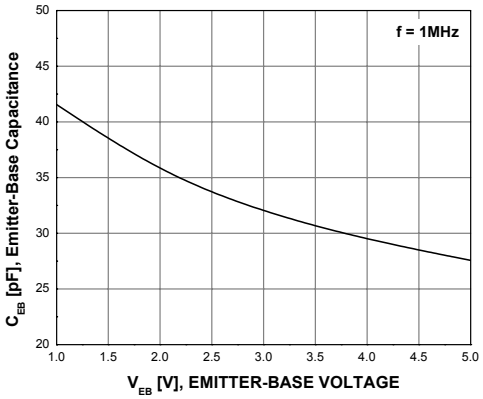


Figure 8. Input Capacitance

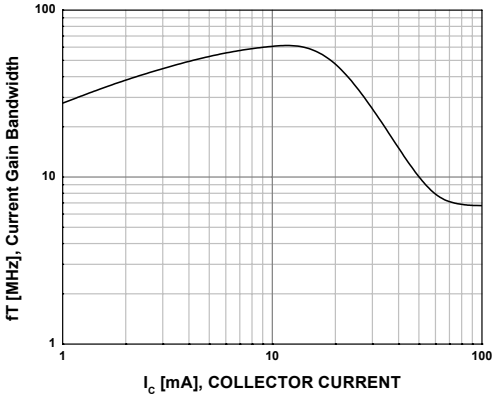


Figure 9. Current Gain Bandwidth Product

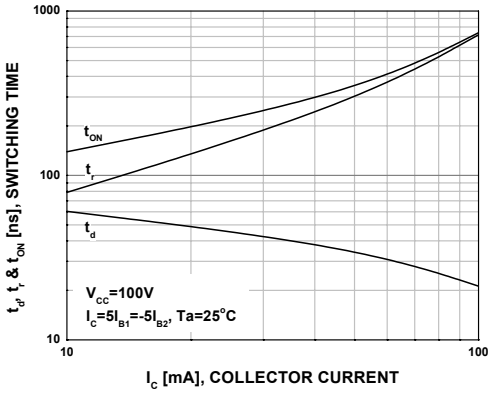


Figure 10. Resistive Load Switching

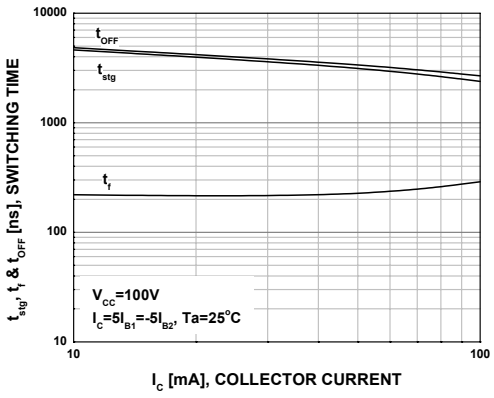
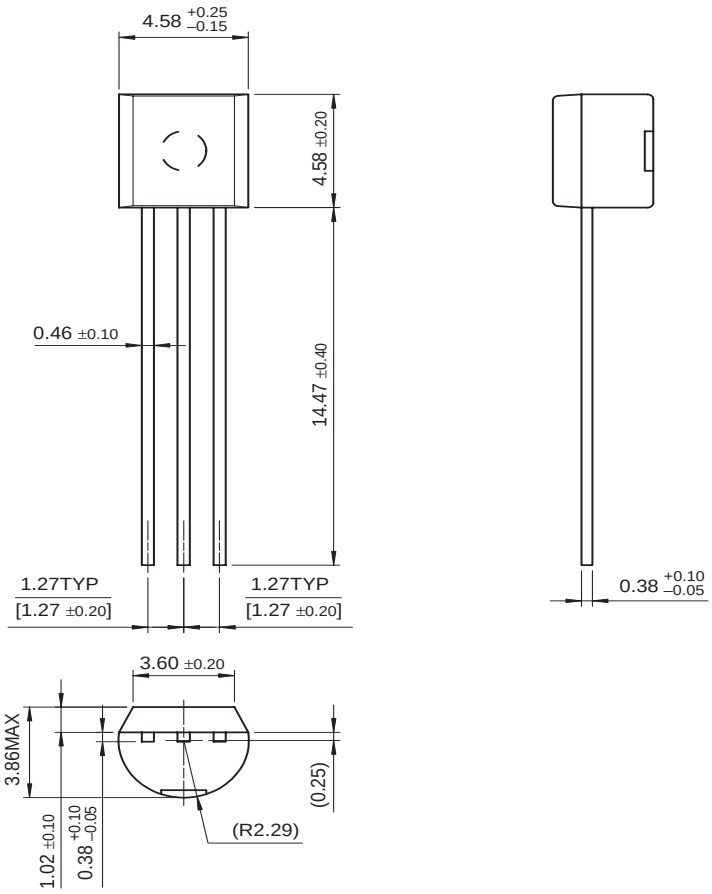


Figure 11. Resistive Load Switching

Physical Dimensions

TO-92



Dimensions in Millimeters

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Rev. I49