

# NPN Epitaxial Silicon Transistor

## 2N6517

### Features

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

### ABSOLUTE MAXIMUM RATINGS

(Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage 2N6517 2N6517C	350 400	V
$V_{CEO}$	Collector-Emitter Voltage 2N6517 2N6517C	350 400	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	$^\circ\text{C}$
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.



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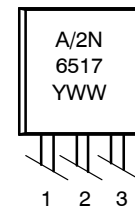


TO-92 3 4.825x4.76  
CASE 135AN



TO-92 3 4.83x4.76  
LEADFORMED  
CASE 135AR

### MARKING DIAGRAM



1: Emitter  
2: Base  
3: Collector

A = Assembly Code  
2N6517/2N6517C = Device Code  
YWW = Date Code

### ORDERING INFORMATION

Device	Package	Shipping
2N6517BU	TO-92 3 (Pb-Free)	10000 / Bulk Bag
2N6517TA	TO-92 3 (Pb-Free)	2000 / Fan-Fold
2N6517CTA	TO-92 3 (Pb-Free)	2000 / Fan-Fold

## 2N6517

### ELECTRICAL CHARACTERISTICS

(Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Symbol	Parameter	Conditions	Min.	Max.	Unit
$BV_{CBO}$	Collector–Base Breakdown Voltage 2N6517 2N6517C	$I_C = 100\ \mu\text{A}, I_E = 0$ $I_C = 100\ \mu\text{A}, I_E = 0$	350 400	– –	V
$BV_{CEO}$	Collector–Emitter Breakdown Voltage* 2N6517 2N6517C	$I_C = 1\ \text{mA}, I_B = 0$ $I_C = 1\ \text{mA}, I_B = 0$	350 400	– –	V
$BV_{EBO}$	Emitter–Base Breakdown Voltage	$I_E = 10\ \mu\text{A}, I_C = 0$	6	–	V
$I_{CBO}$	Collector Cut–Off Current	$V_{CB} = 250\ \text{V}, I_E = 0$	–	50	nA
$I_{EBO}$	Emitter Cut–Off Current	$V_{EB} = 5\ \text{V}, I_C = 0$	–	50	nA
$h_{FE}$	DC Current Gain* 2N6517/2N6517C 2N6517/2N6517C 2N6517/2N6517C 2N6517/2N6517C 2N6517/2N6517C 2N6517C	$V_{CE} = 10\ \text{V}, I_C = 1\ \text{mA}$ $V_{CE} = 10\ \text{V}, I_C = 10\ \text{mA}$ $V_{CE} = 10\ \text{V}, I_C = 30\ \text{mA}$ $V_{CE} = 10\ \text{V}, I_C = 50\ \text{mA}$ $V_{CE} = 10\ \text{V}, I_C = 100\ \text{mA}$ $V_{CE} = 10\ \text{V}, I_C = 5\ \text{mA}$	20 30 30 20 15 50	– – 200 200 – 200	
$V_{CE(sat)}$	Collector–Emitter Saturation Voltage	$I_C = 10\ \text{mA}, I_B = 1\ \text{mA}$ $I_C = 20\ \text{mA}, I_B = 2\ \text{mA}$ $I_C = 30\ \text{mA}, I_B = 3\ \text{mA}$ $I_C = 50\ \text{mA}, I_B = 5\ \text{mA}$	– – – –	0.3 0.35 0.5 1	V
$V_{BE(sat)}$	Base–Emitter Saturation Voltage	$I_C = 10\ \text{mA}, I_B = 1\ \text{mA}$ $I_C = 20\ \text{mA}, I_B = 2\ \text{mA}$ $I_C = 30\ \text{mA}, I_B = 3\ \text{mA}$	– – –	0.75 0.85 0.9	V
$C_{ob}$	Output Capacitance	$V_{CB} = 20\ \text{V}, I_E = 0, f = 1\ \text{MHz}$	–	6	pF
$f_T$	Current Gain Bandwidth Product*	$I_C = 10\ \text{mA}, V_{CE} = 20\ \text{V}, f = 20\ \text{MHz}$	40	200	MHz
$V_{BE(on)}$	Base–Emitter On Voltage	$I_C = 100\ \text{mA}, V_{CE} = 10\ \text{V},$	–	2	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

\*Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2\%$

TYPICAL PERFORMANCE CHARACTERISTICS

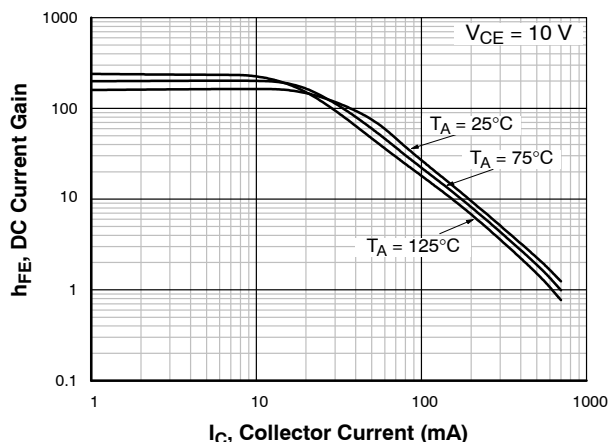


Figure 1. DC Current Gain

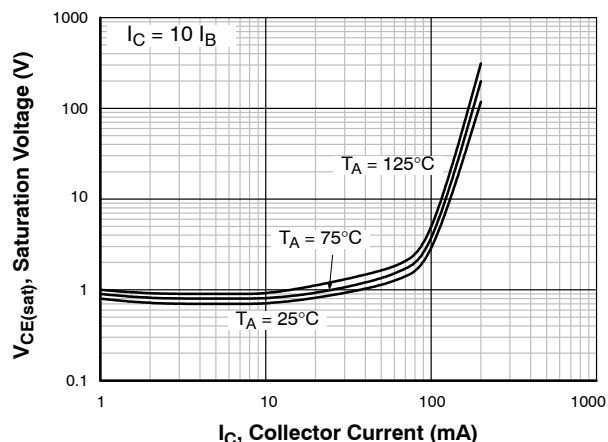


Figure 2. Saturation Voltage

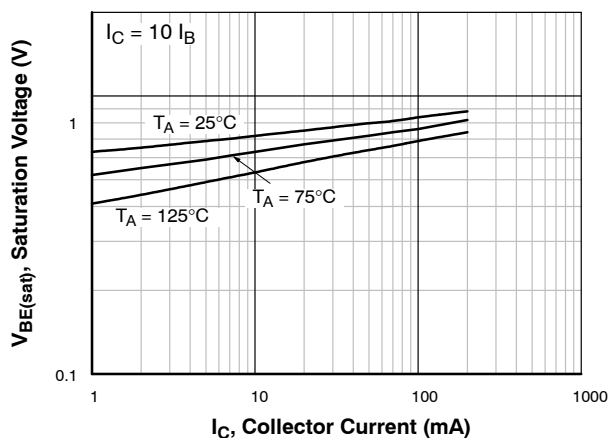


Figure 3. Saturation Voltage

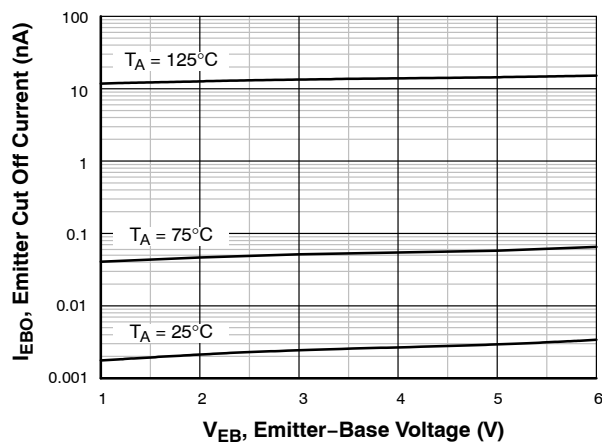


Figure 4. Emitter Cut Off Current

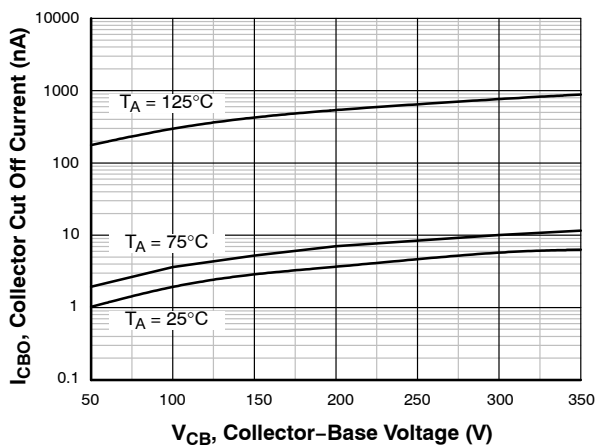


Figure 5. Collector Cut Off Current

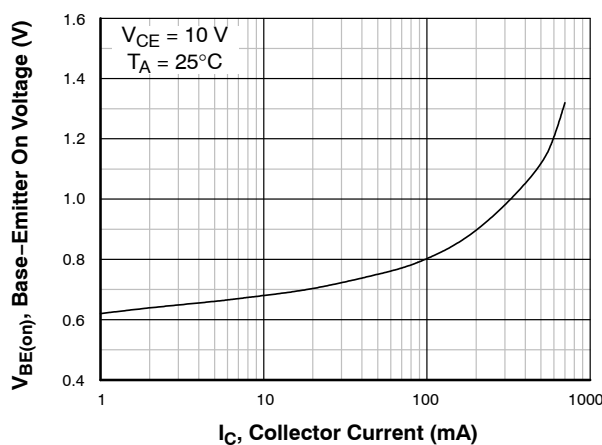


Figure 6. Base-Emitter On Voltage

TYPICAL PERFORMANCE CHARACTERISTICS (Continued)

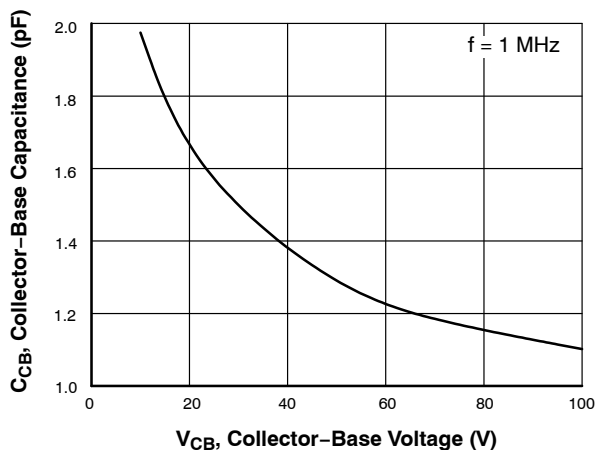


Figure 7. Output Capacitance

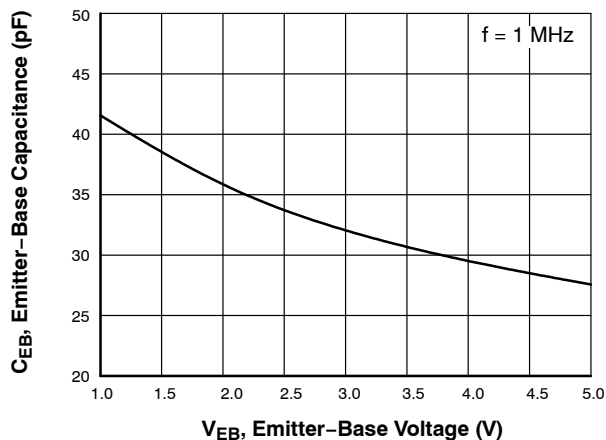


Figure 8. Input Capacitance

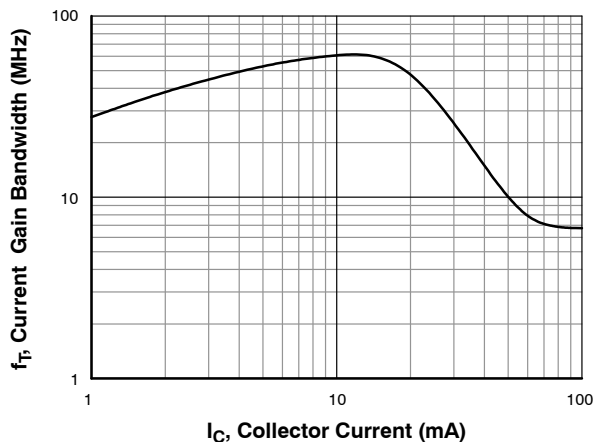


Figure 9. Current Gain Bandwidth Product

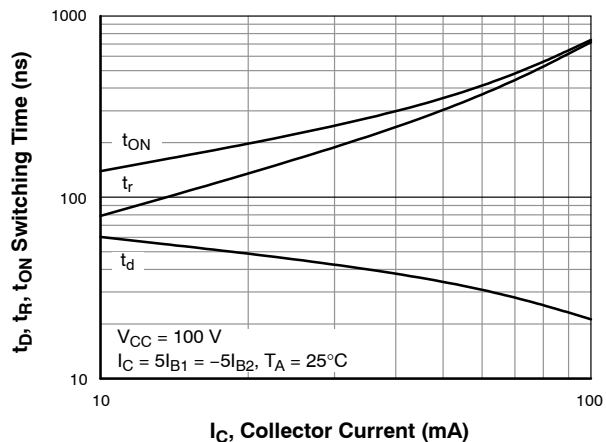


Figure 10. Resistive Load Switching

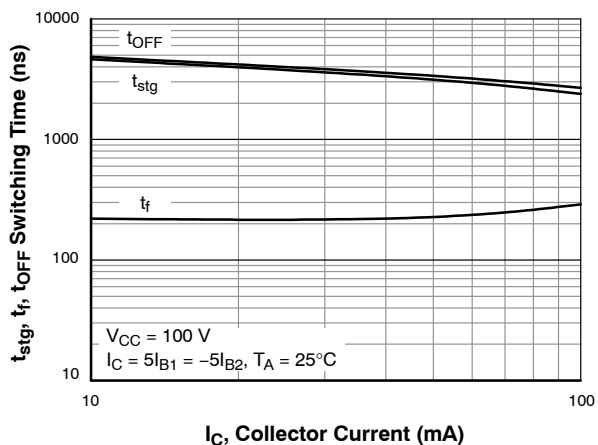


Figure 11. Resistive Load Switching

**MECHANICAL CASE OUTLINE**  
**PACKAGE DIMENSIONS**

TO-92 3 4.825x4.76  
CASE 135AN  
ISSUE O

DATE 31 JUL 2016



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**TO-92 3 4.83x4.76 LEADFORMED**  
**CASE 135AR**  
**ISSUE O**


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