

NPN Epitaxial Silicon Transistor

2N6517

Features

- High Voltage Transistor
- Collector Dissipation: $P_C(\max) = 625 \text{ mW}$
- 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	$-55 \sim 150$	$^\circ\text{C}$

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.

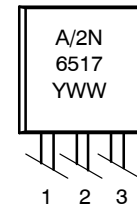


TO-92 3 4.825x4.76
CASE 135AN



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MARKING DIAGRAM



1: Emitter
2: Base
3: Collector

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

ORDERING INFORMATION

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

DISCONTINUED (Note 1)

Device	Package	Shipping
2N6517BU	TO-92 3 (Pb-Free)	10000 / Bulk Bag

1. **DISCONTINUED:** These devices are not recommended for new design. Please contact your **onsemi** representative for information. The most current information on these devices may be available on www.onsemi.com.

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

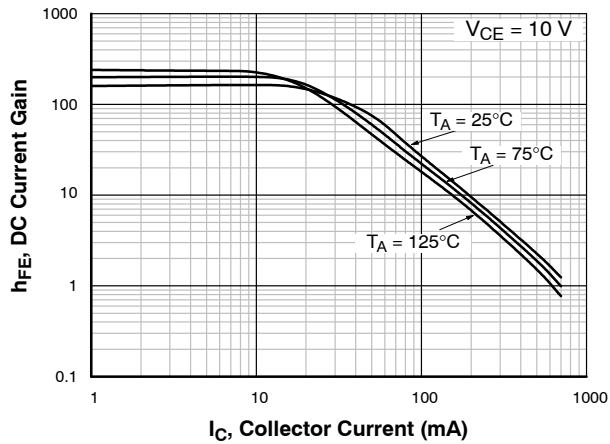


Figure 1. DC Current Gain

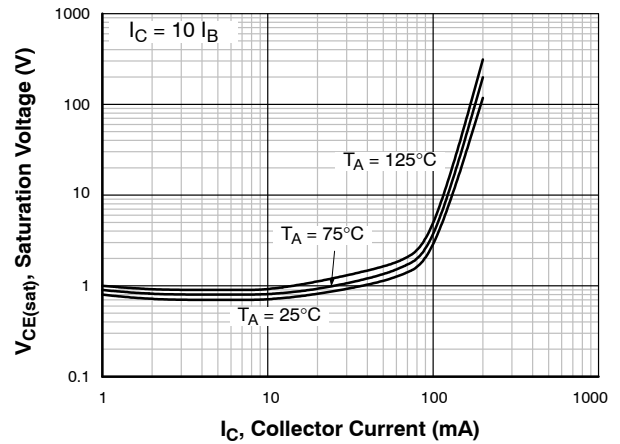


Figure 2. Saturation Voltage

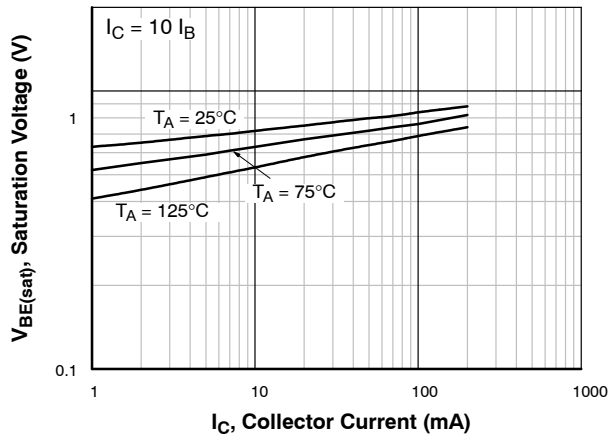


Figure 3. Saturation Voltage

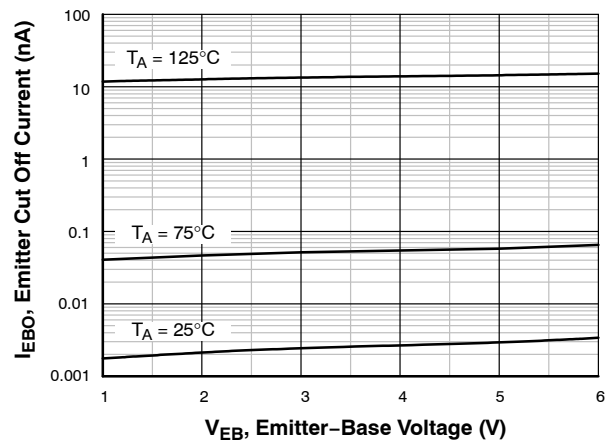


Figure 4. Emitter Cut Off Current

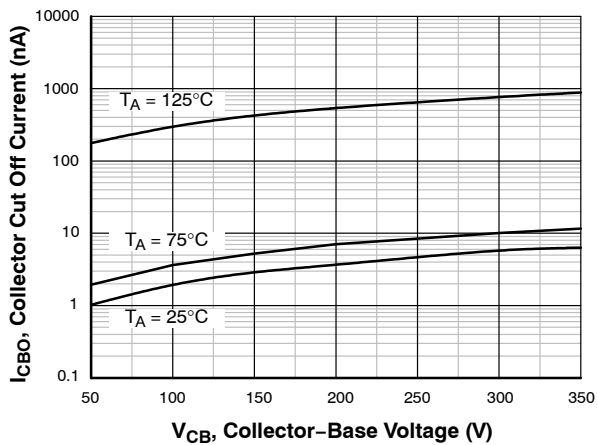


Figure 5. Collector Cut Off Current

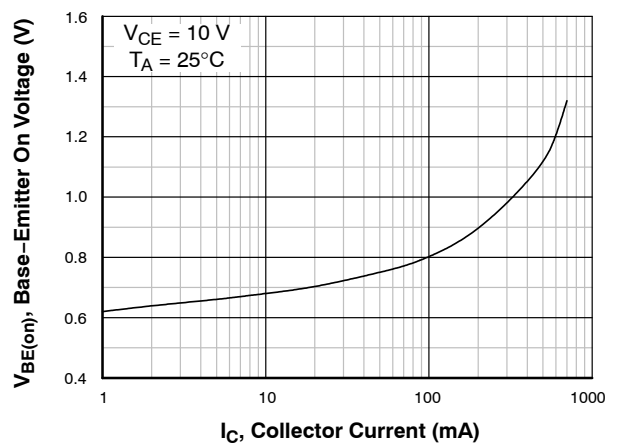


Figure 6. Base-Emitter On Voltage

TYPICAL PERFORMANCE CHARACTERISTICS (CONTINUED)

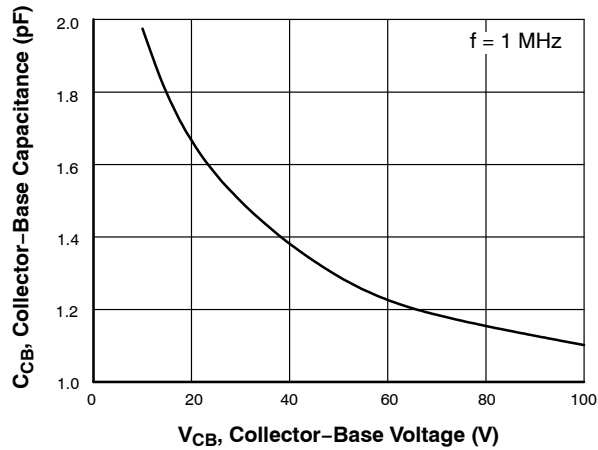


Figure 7. Output Capacitance

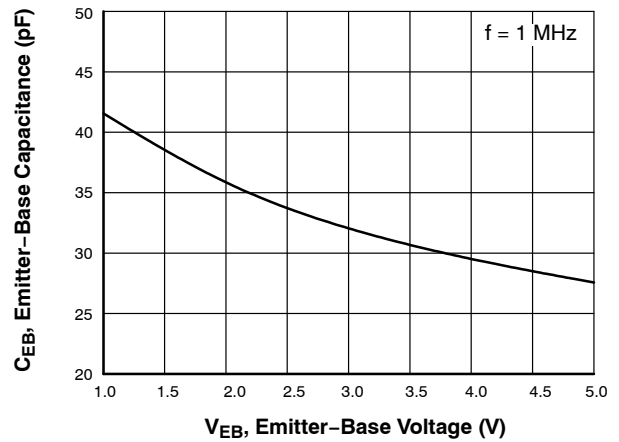


Figure 8. Input Capacitance

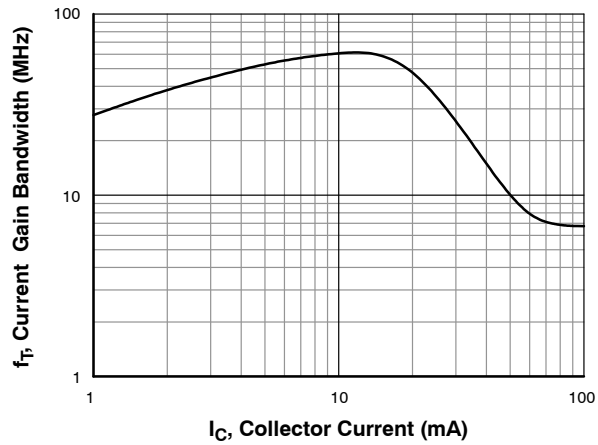


Figure 9. Current Gain Bandwidth Product

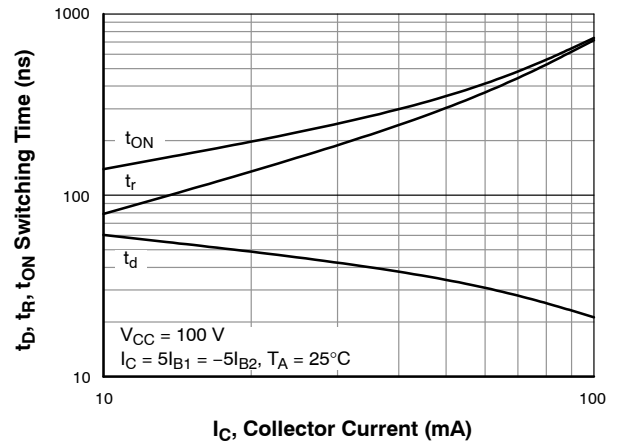


Figure 10. Resistive Load Switching

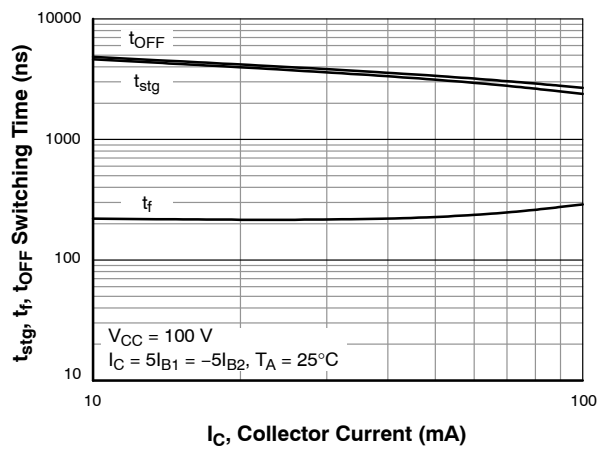
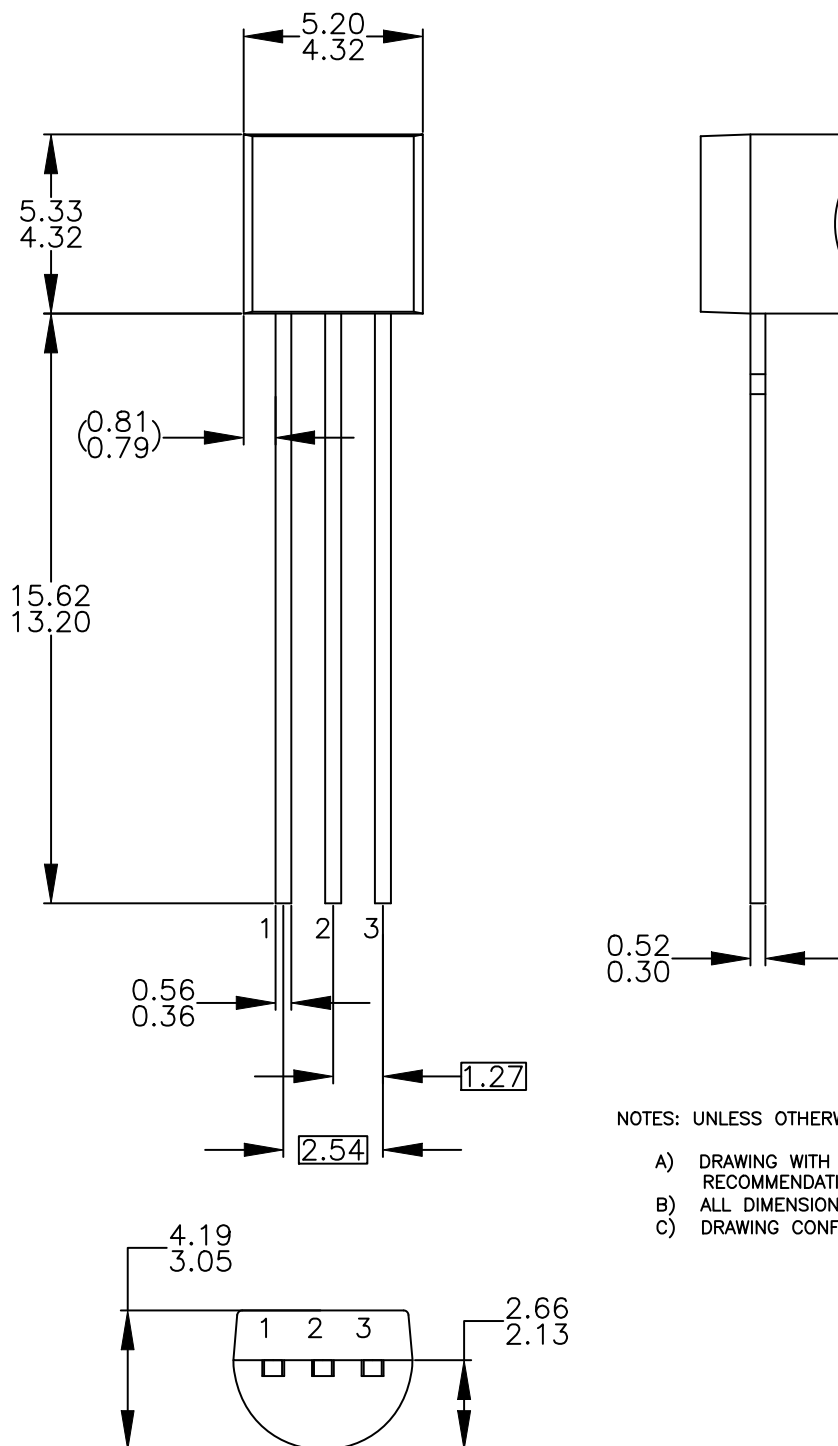


Figure 11. Resistive Load Switching

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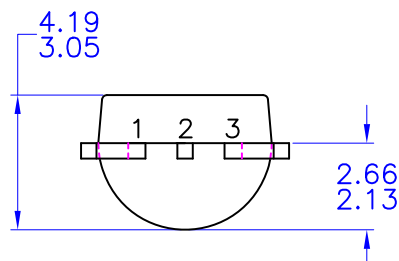
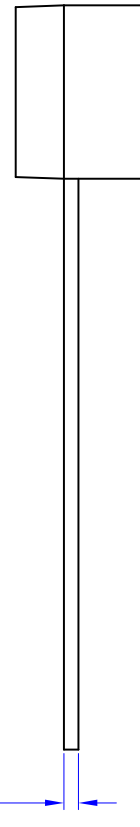
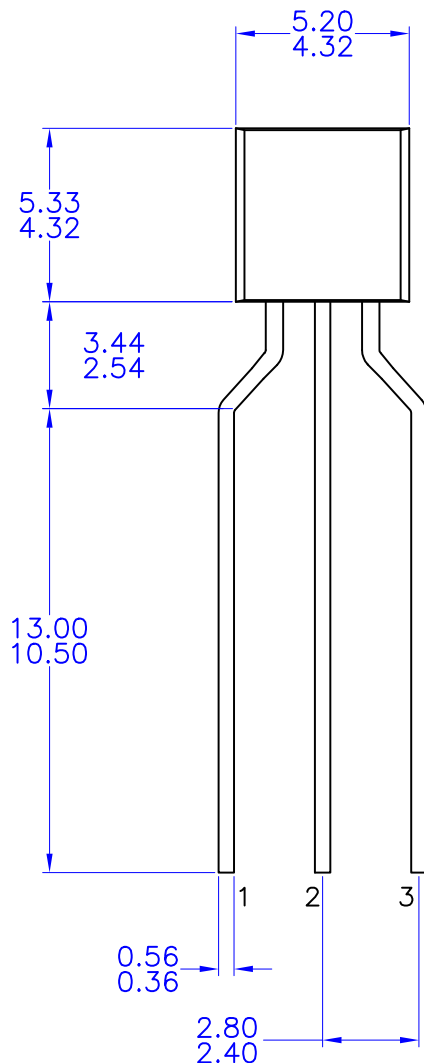
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