NPN Epitaxial Silicon Transistor

2N6517

Features

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

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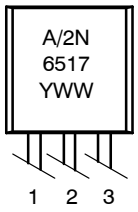
ABSOLUTE MAXIMUM RATINGS

(Values are at T_A = 25°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	°C
T_{STG}	Storage Temperature	−55 ~ 150	°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.

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.

ELECTRICAL CHARACTERISTICS

(Values are at T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Conditions	Min.	Max.	Unit
BV_{CBO}	Collector−Base Breakdown Voltage				V
	2N6517	I_C = 100 μA, I_E = 0	350	–	
	2N6517C	I_C = 100 μA, I_E = 0	400	–	
BV_{CEO}	Collector−Emitter Breakdown Voltage*				V
	2N6517	I_C = 1 mA, I_B = 0	350	–	
	2N6517C	I_C = 1 mA, I_B = 0	400	–	
BV_{EBO}	Emitter−Base Breakdown Voltage	I_E = 10 μA, I_C = 0	6	–	V
I_{CBO}	Collector Cut−Off Current	V_{CB} = 250 V, I_E = 0	–	50	nA
I_{EBO}	Emitter Cut−Off Current	V_{EB} = 5 V, I_C = 0	–	50	nA
h_{FE}	DC Current Gain*				
	2N6517/2N6517C	V_{CE} = 10 V, I_C = 1 mA	20	–	
	2N6517/2N6517C	V_{CE} = 10 V, I_C = 10 mA	30	–	
	2N6517/2N6517C	V_{CE} = 10 V, I_C = 30 mA	30	200	
	2N6517/2N6517C	V_{CE} = 10 V, I_C = 50 mA	20	200	
	2N6517/2N6517C	V_{CE} = 10 V, I_C = 100 mA	15	–	
	2N6517C	V_{CE} = 10 V, I_C = 5 mA	50	200	
V_{CE}(sat)	Collector−Emitter Saturation Voltage	I_C = 10 mA, I_B = 1 mA	–	0.3	V
		I_C = 20 mA, I_B = 2 mA	–	0.35	
		I_C = 30 mA, I_B = 3 mA	–	0.5	
		I_C = 50 mA, I_B = 5 mA	–	1	
V_{BE}(sat)	Base−Emitter Saturation Voltage	I_C = 10 mA, I_B = 1 mA	–	0.75	V
		I_C = 20 mA, I_B = 2 mA	–	0.85	
		I_C = 30 mA, I_B = 3 mA	–	0.9	
C_{ob}	Output Capacitance	V_{CB} = 20 V, I_E = 0, f = 1 MHz	–	6	pF
f_T	Current Gain Bandwidth Product*	I_C = 10 mA, V_{CE} = 20 V, f = 20 MHz	40	200	MHz
V_{BE}(on)	Base−Emitter On Voltage	I_C = 100 mA, V_{CE} = 10 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 ≤ 300 μs, Duty Cycle ≤ 2%

TYPICAL PERFORMANCE CHARACTERISTICS

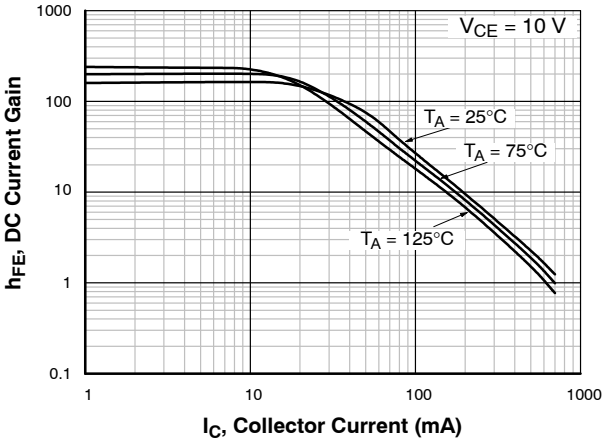


Figure 1. DC Current Gain

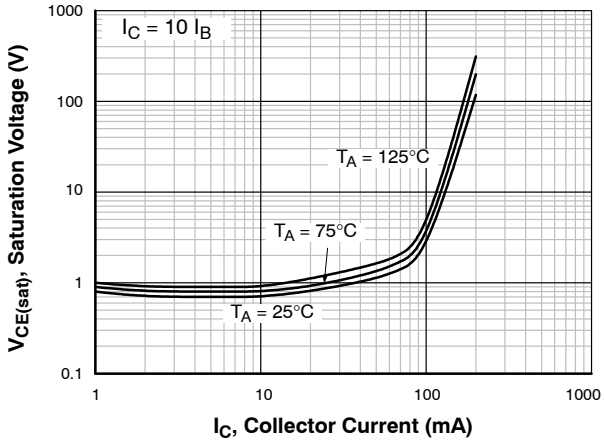


Figure 2. Saturation Voltage

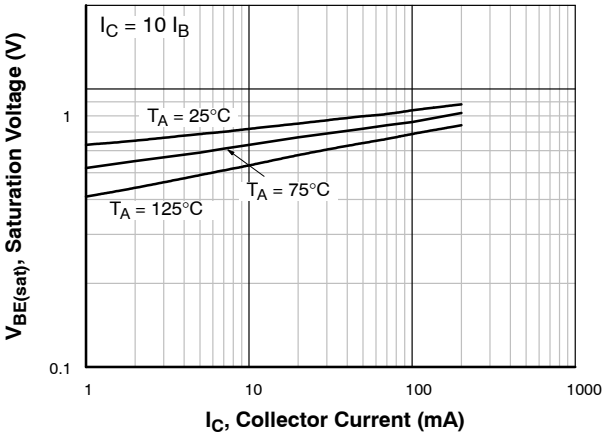


Figure 3. Saturation Voltage

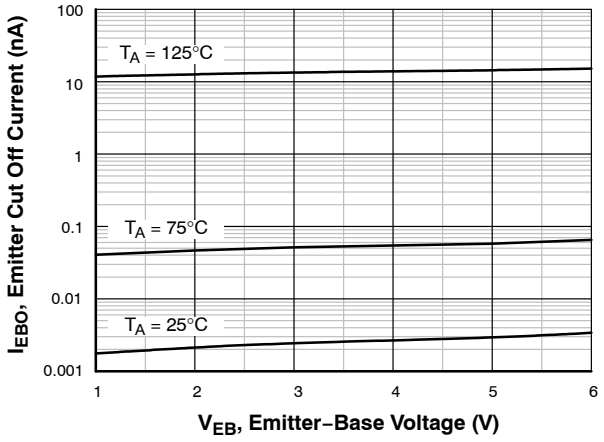


Figure 4. Emitter Cut Off Current

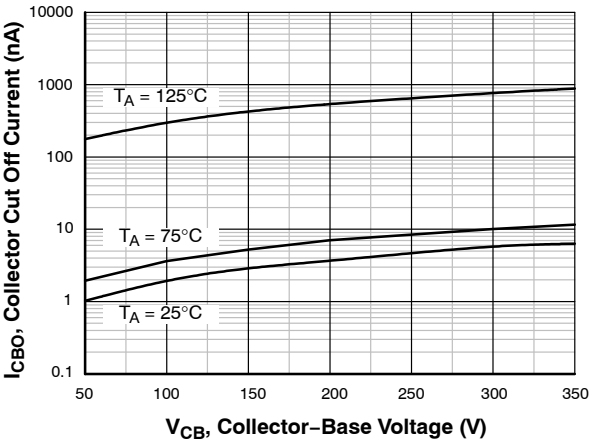


Figure 5. Collector Cut Off Current

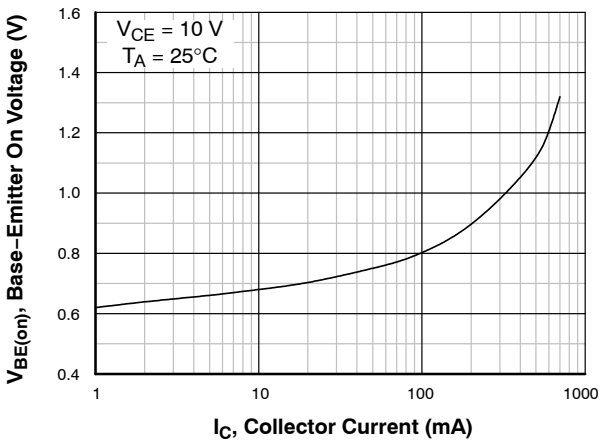


Figure 6. Base−Emitter On Voltage

TYPICAL PERFORMANCE CHARACTERISTICS (CONTINUED)

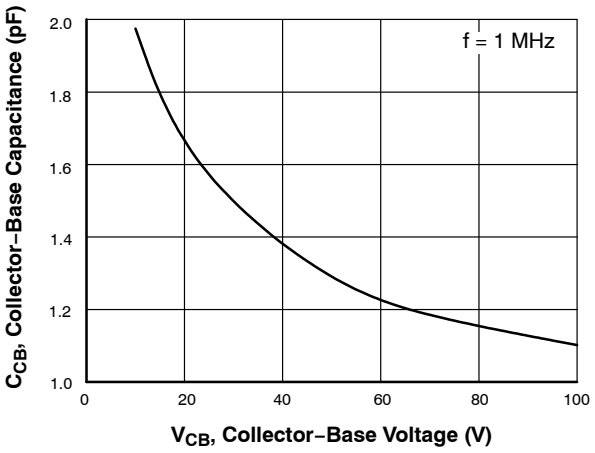


Figure 7. Output Capacitance

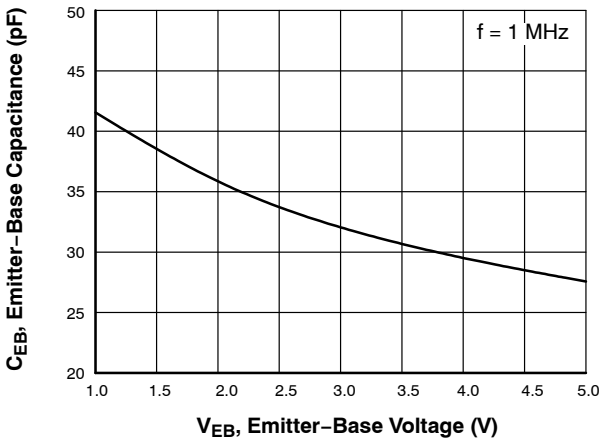


Figure 8. Input Capacitance

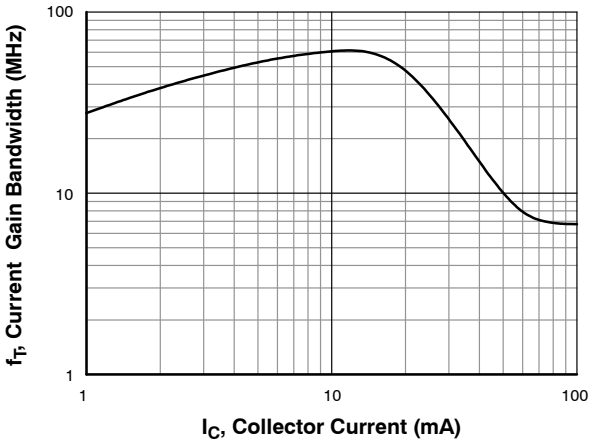


Figure 9. Current Gain Bandwidth Product

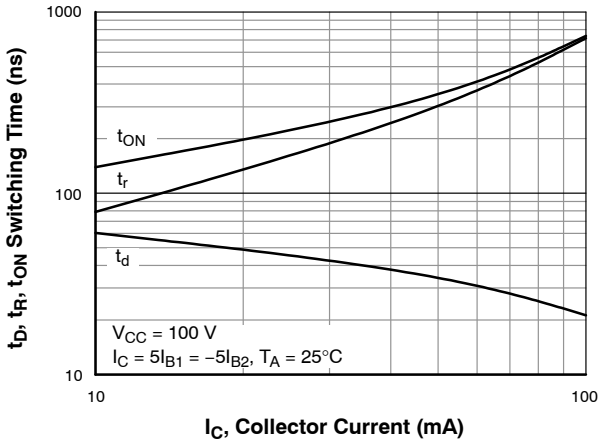


Figure 10. Resistive Load Switching

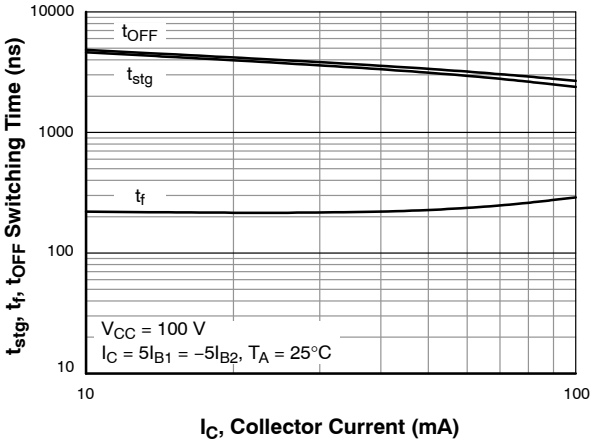


Figure 11. Resistive Load Switching

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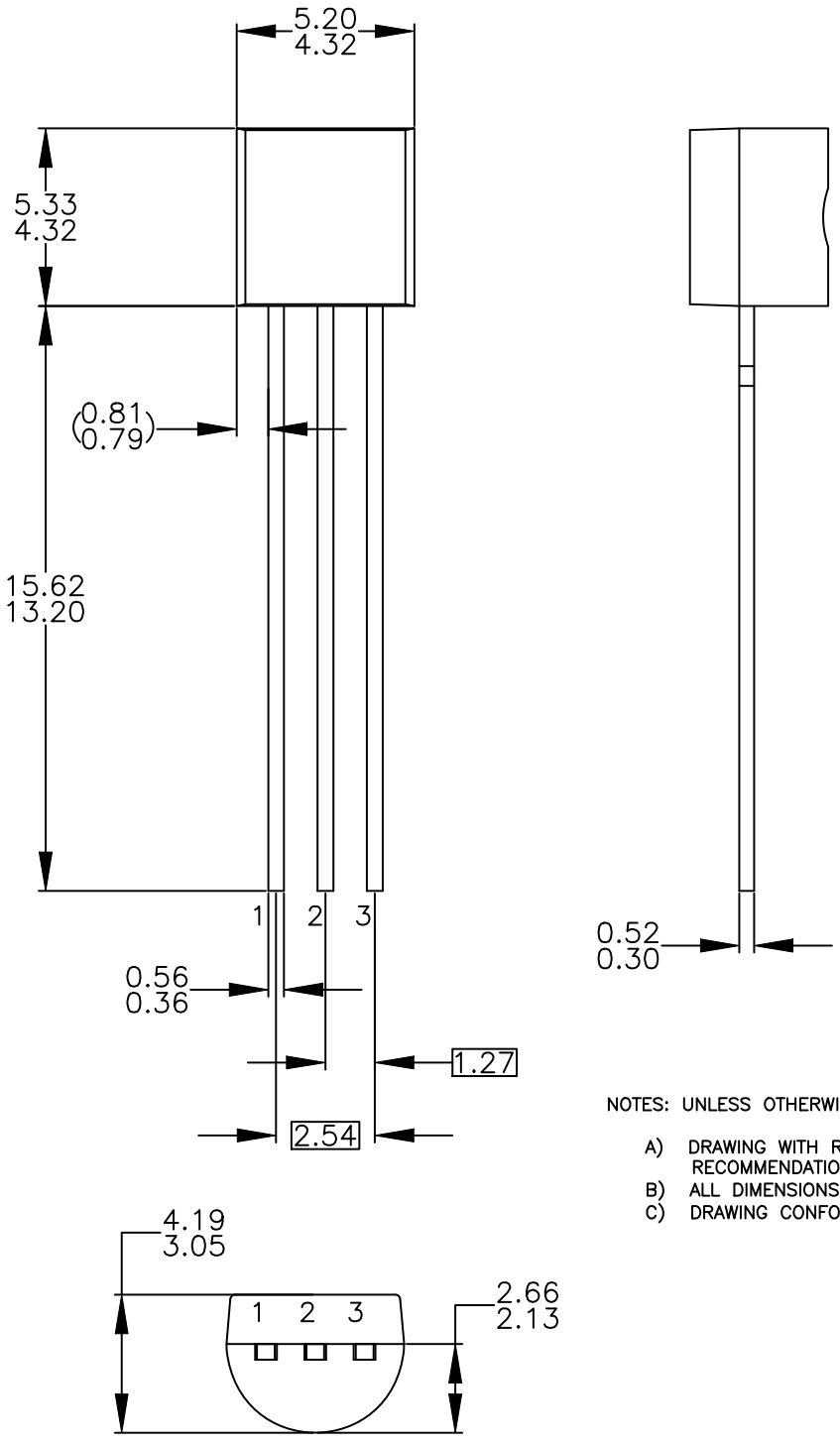

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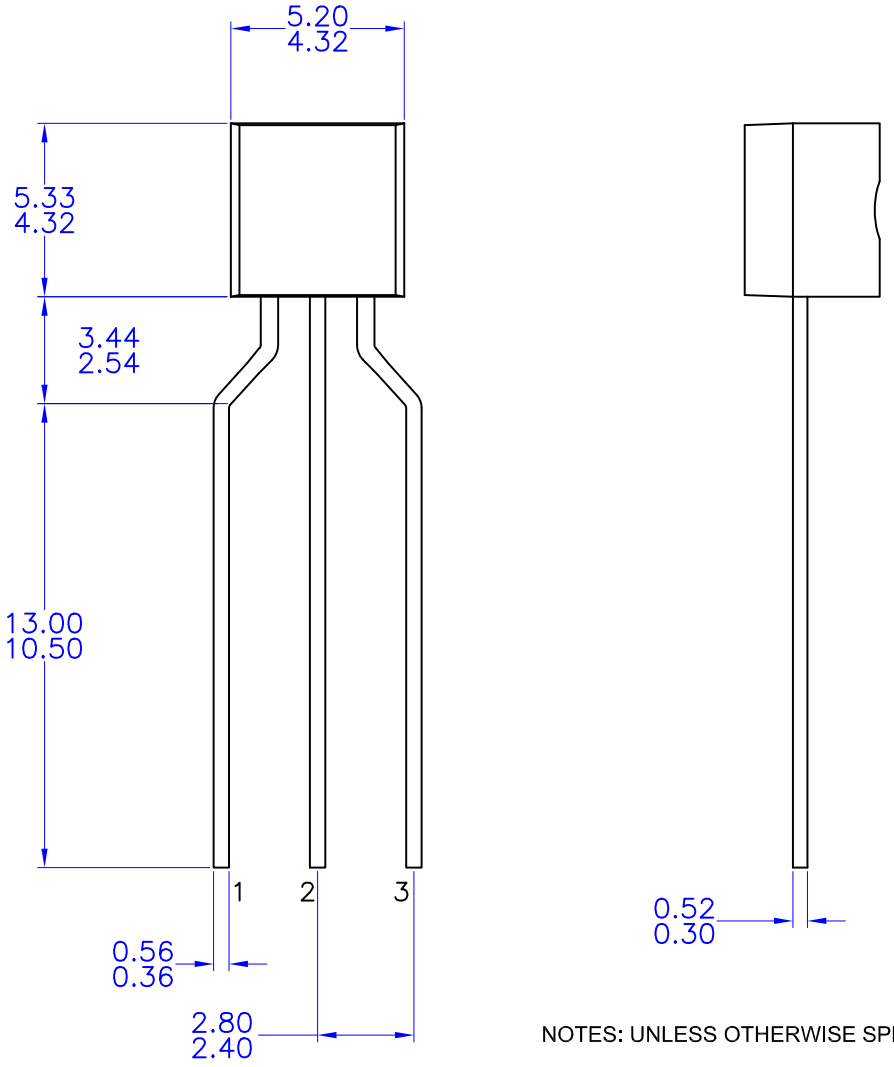

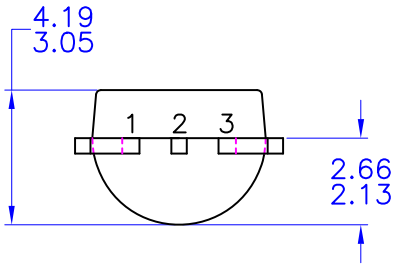

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