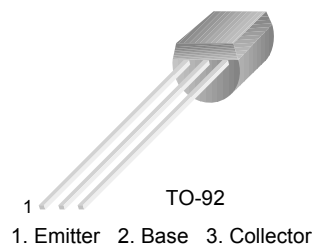


# 2N6517

## NPN Epitaxial Silicon Transistor

### 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 $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	2N6517	350
		2N6517C	400
$V_{CEO}$	Collector-Emitter Voltage	2N6517	350
		2N6517C	400
$V_{EBO}$	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	$^\circ\text{C}$

### Electrical Characteristics $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
$BV_{CBO}$	Collector-Base Breakdown Voltage	2N6517 $I_C = 100\mu\text{A}, I_E = 0$	350		V
		2N6517C $I_C = 100\mu\text{A}, I_E = 0$	400		V
$BV_{CEO}$	Collector-Emitter Breakdown Voltage *	2N6517 $I_C = 1\text{mA}, I_B = 0$	350		V
		2N6517C $I_C = 1\text{mA}, I_B = 0$	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 $V_{CE} = 10\text{V}, I_C = 1\text{mA}$	20		
		2N6517/2N6517C $V_{CE} = 10\text{V}, I_C = 10\text{mA}$	30		
		2N6517/2N6517C $V_{CE} = 10\text{V}, I_C = 30\text{mA}$	30	200	
		2N6517/2N6517C $V_{CE} = 10\text{V}, I_C = 50\text{mA}$	20	200	
		2N6517/2N6517C $V_{CE} = 10\text{V}, I_C = 100\text{mA}$	15		
		2N6517C $V_{CE} = 10\text{V}, I_C = 5\text{mA}$	50	200	

**Electrical Characteristics** (Continued)  $T_a = 25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Conditions	Min.	Max.	Units
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.3	V
		$I_C = 20\text{mA}, I_B = 2\text{mA}$		0.35	V
		$I_C = 30\text{mA}, I_B = 3\text{mA}$		0.5	V
		$I_C = 50\text{mA}, I_B = 5\text{mA}$		1	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 1\text{mA}$		0.75	V
		$I_C = 20\text{mA}, I_B = 2\text{mA}$		0.85	V
		$I_C = 30\text{mA}, I_B = 3\text{mA}$		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

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

Typical Performance Characteristics

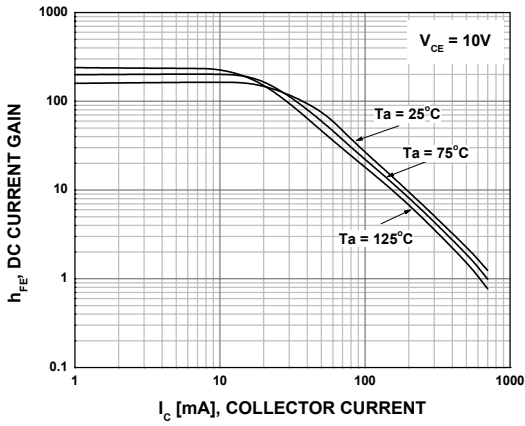


Figure 1. DC Current Gain

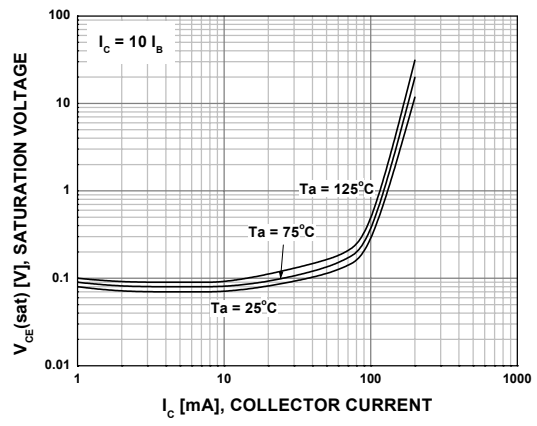


Figure 2. Saturation Voltage

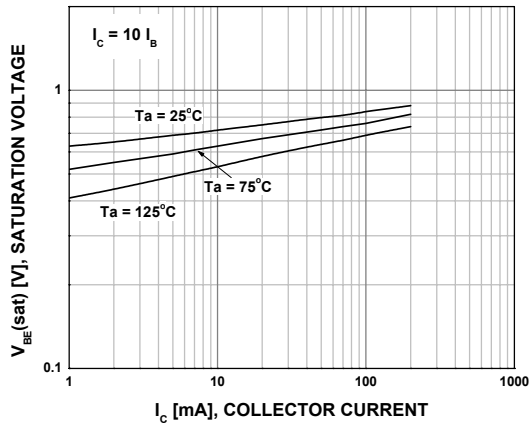


Figure 3. Saturation Voltage

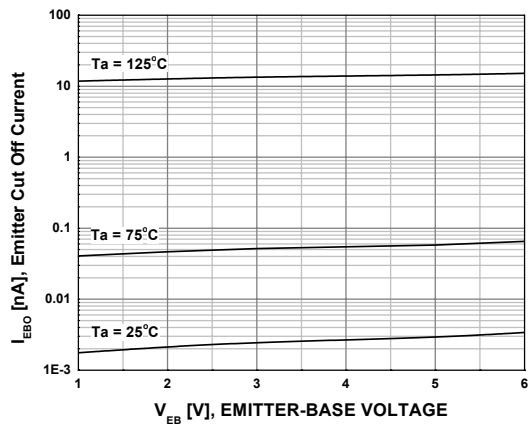


Figure 4. Emitter Cut Off Current

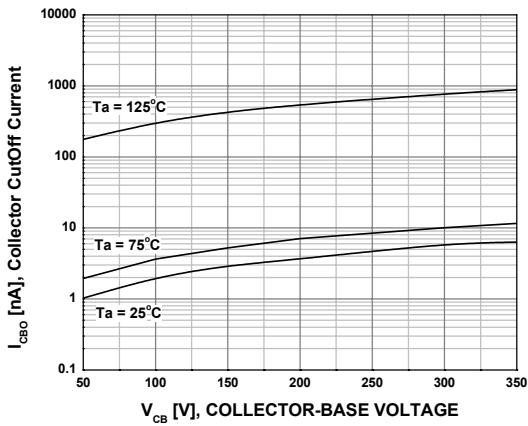


Figure 5. Collector CutOff Current

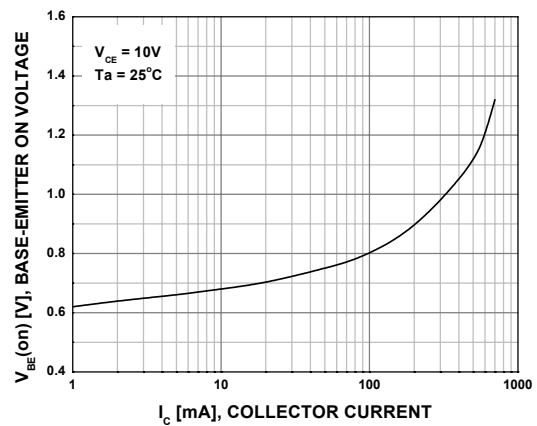
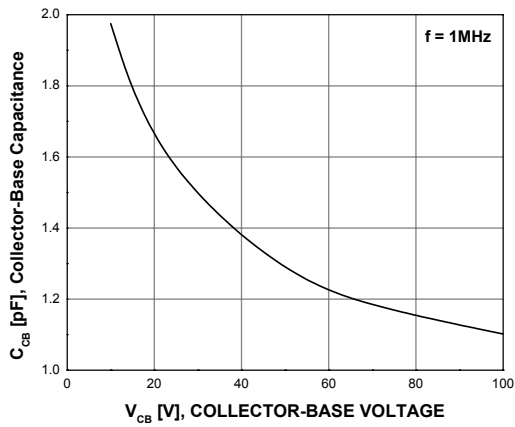
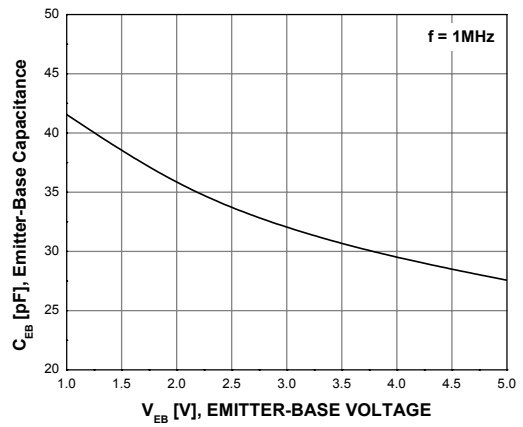


Figure 6. Base-Emitter On Voltage

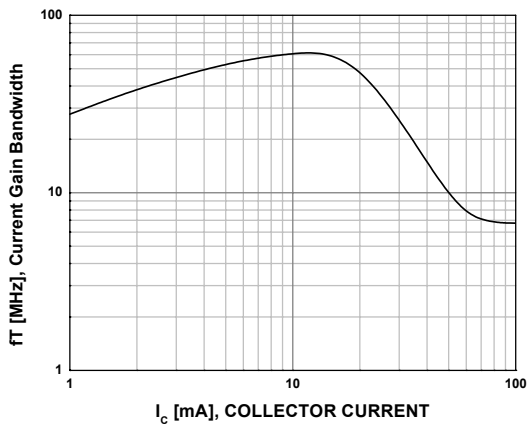
**Typical Performance Characteristics (Continued)**



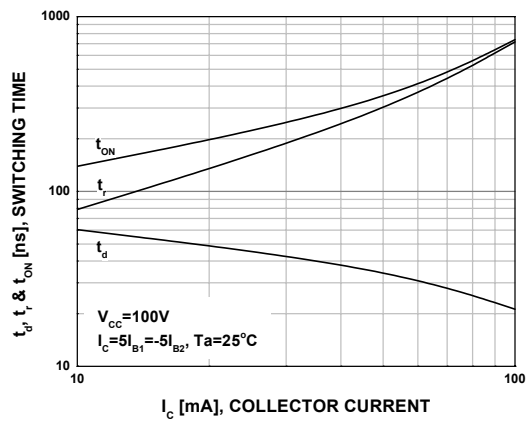
**Figure 7. Output Capacitance**



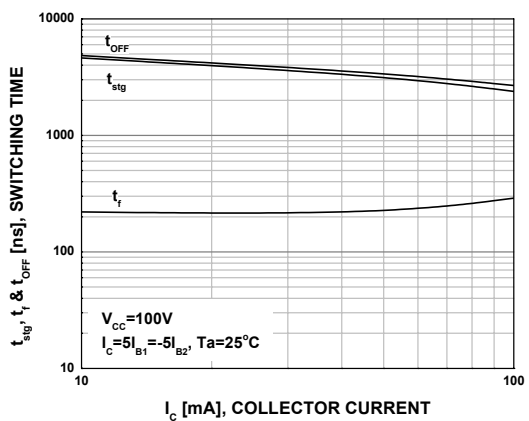
**Figure 8. Input Capacitance**



**Figure 9. Current Gain Bandwidth Product**



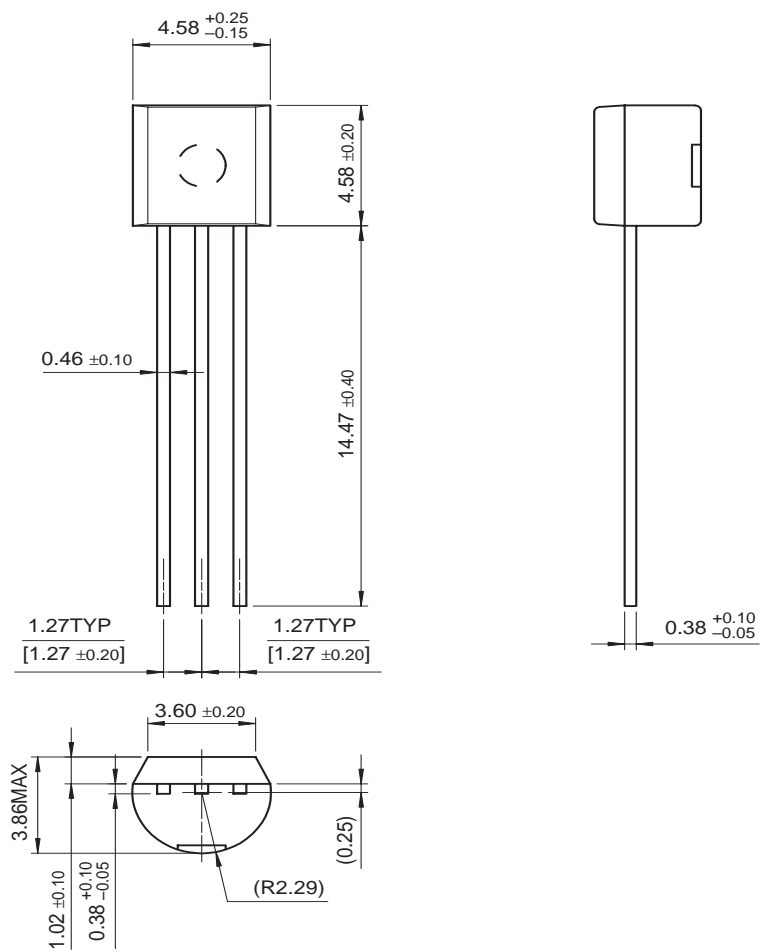
**Figure 10. Resistive Load Switching**



**Figure 11. Resistive Load Switching**

### Physical Dimensions

## TO-92



Dimensions in Millimeters



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| CorePOWER™               | Green FPS™ e-Series™                | QFET®                                 |   |
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| EcoSPARK®                | MICROCOUPLER™                       | SignalWise™                           |   |
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| FAST®                    | OptoHiT™                            | SuperSOT™-6                           |   |
| FastvCore™               | OPTOLOGIC®                          | SuperSOT™-8                           |   |
| FETBench™                | OPTOPLANAR®                         | SupreMOS®                             |   |
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