

2N6515 2N6516 2N6517 NPN  
2N6518 2N6519 2N6520 PNP

**COMPLEMENTARY SILICON  
HIGH VOLTAGE TRANSISTORS**



**TO-92 CASE**



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**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N6515, 2N6518 series devices are complementary silicon transistors designed for high voltage driver and amplifier applications.

**MARKING: FULL PART NUMBER**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage (NPN)  
Emitter-Base Voltage (PNP)  
Continuous Collector Current  
Continuous Base Current  
Power Dissipation  
Operating and Storage Junction Temperature

SYMBOL	2N6515	2N6516	2N6517	UNITS
	<u>2N6518</u>	<u>2N6519</u>	<u>2N6520</u>	
$V_{CBO}$	250	300	350	V
$V_{CEO}$	250	300	350	V
$V_{EBO}$		6.0		V
$V_{EBO}$		5.0		V
$I_C$		500		mA
$I_B$		250		mA
$P_D$		625		mW
$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	2N6515		2N6516		2N6517		UNITS
		<u>2N6518</u>	<u>2N6519</u>	<u>2N6519</u>	<u>2N6520</u>	<u>2N6520</u>		
$I_{CBO}$	$V_{CB}=150\text{V}$	-	50	-	-	-	-	nA
$I_{CBO}$	$V_{CB}=200\text{V}$	-	-	-	50	-	-	nA
$I_{CBO}$	$V_{CB}=250\text{V}$	-	-	-	-	-	50	nA
$I_{EBO}$	$V_{EB}=5.0\text{V}$ (NPN)	-	50	-	50	-	50	nA
$I_{EBO}$	$V_{EB}=4.0\text{V}$ (PNP)	-	50	-	50	-	50	nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	250	-	300	-	350	-	V
$BV_{CEO}$	$I_C=1.0\text{mA}$	250	-	300	-	350	-	V
$BV_{EBO}$	$I_E=10\mu\text{A}$ (NPN)	6.0	-	6.0	-	6.0	-	V
$BV_{EBO}$	$I_E=10\mu\text{A}$ (PNP)	5.0	-	5.0	-	5.0	-	V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	-	0.30	-	0.30	-	0.30	V
$V_{CE(SAT)}$	$I_C=20\text{mA}, I_B=2.0\text{mA}$	-	0.35	-	0.35	-	0.35	V
$V_{CE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$	-	0.50	-	0.50	-	0.50	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$	-	1.0	-	1.0	-	1.0	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	-	0.75	-	0.75	-	0.75	V
$V_{BE(SAT)}$	$I_C=20\text{mA}, I_B=2.0\text{mA}$	-	0.85	-	0.85	-	0.85	V
$V_{BE(SAT)}$	$I_C=30\text{mA}, I_B=3.0\text{mA}$	-	0.90	-	0.90	-	0.90	V
$V_{BE(ON)}$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	-	2.0	-	2.0	-	2.0	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	35	-	30	-	20	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	50	-	45	-	30	-	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=30\text{mA}$	50	300	45	270	30	200	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=50\text{mA}$	45	220	40	200	20	200	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	25	-	20	-	15	-	

R2 (18-January 2016)

2N6515 2N6516 2N6517 NPN  
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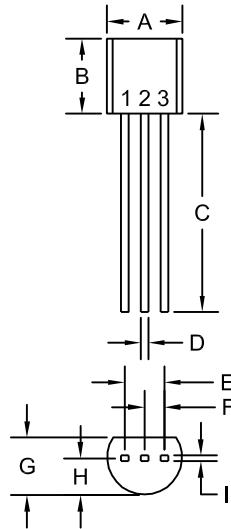
COMPLEMENTARY SILICON  
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$f_T$	$V_{CE}=20\text{V}$ , $I_C=10\text{mA}$ , $f=20\text{MHz}$	40	200	MHz
$C_{cb}$	$V_{CB}=20\text{V}$ , $I_E=0$ , $f=1.0\text{MHz}$		6.0	pF
$C_{eb}$	$V_{EB}=0.5\text{V}$ , $I_C=0$ , $f=1.0\text{MHz}$ (NPN)		80	pF
$C_{eb}$	$V_{EB}=0.5\text{V}$ , $I_C=0$ , $f=1.0\text{MHz}$ (PNP)		100	pF
$t_{on}$	$V_{CC}=100\text{V}$ , $V_{BE}=2.0\text{V}$ , $I_C=50\text{mA}$ , $I_{B1}=10\text{mA}$		200	ns
$t_{off}$	$V_{CC}=100\text{V}$ , $I_C=50\text{mA}$ , $I_{B1}=I_{B2}=10\text{mA}$		3.5	$\mu\text{s}$

**TO-92 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.175	0.205	4.45	5.21
B	0.170	0.210	4.32	5.33
C	0.500	-	12.70	-
D	0.016	0.022	0.41	0.56
E	0.100		2.54	
F	0.050		1.27	
G	0.125	0.165	3.18	4.19
H	0.080	0.105	2.03	2.67
I	0.015		0.38	

TO-92 (REV: R1)

**LEAD CODE:**

- 1) Emitter
- 2) Base
- 3) Collector

**MARKING:**  
 FULL PART NUMBER

R1

R2 (18-January 2016)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

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