

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

**COMPLEMENTARY SILICON
HIGH VOLTAGE TRANSISTORS**



TO-92 CASE



www.centrasemi.com

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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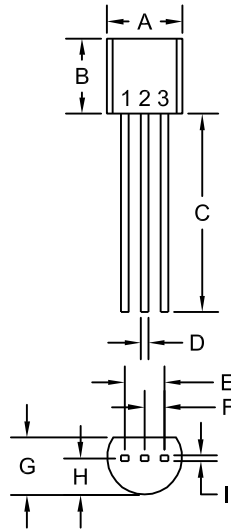
COMPLEMENTARY SILICON
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$)

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	μs

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



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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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).

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

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

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