

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N4904 THRU 2N4906 PNP  
2N4913 THRU 2N4915 NPN

COMPLEMENTARY SILICON POWER  
TRANSISTORS

JEDEC TO-3 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4904, 4913 series types are complementary silicon power transistors manufactured by the epitaxial base process, mounted in a hermetically sealed metal case, designed for general purpose amplifier and switching application.

## MAXIMUM RATINGS ( $T_C=25^\circ\text{C}$ )

	SYMBOL	2N4904 2N4913	2N4905 2N4914	2N4906 2N4915	UNIT
Collector-Base Voltage	$V_{CB0}$	40	60	80	V
Collector-Emitter Voltage	$V_{CE0}$	40	60	80	V
Emitter-Base Voltage	$V_{EB0}$		5.0		V
Collector Current	$I_C$		5.0		A
Base Current	$I_B$		1.0		A
Power Dissipation	$P_D$		87.5		W
Operating and Storage Junction Temperature	$T_J, T_{STG}$	-65 to +200			$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	2.0			$^\circ\text{C}/\text{W}$

## ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	PNP TYPES		NPN TYPES		UNIT
		MIN	MAX	MIN	MAX	
$I_{CB0}$	$V_{CB}=\text{Rated } V_{CB0}$		0.1		1.0	mA
$I_{CE0}$	$V_{CE}=\text{Rated } V_{CE0}$		1.0		1.0	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF})=1.5\text{V}$		0.1		1.0	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$		2.0		2.0	mA
$I_{EB0}$	$V_{BE}=5.0\text{V}$		1.0		1.0	mA
$BV_{CE0}$	$I_C=0.2\text{A}$ (2N4904, 2N4913)	40		40		V
$BV_{CE0}$	$I_C=0.2\text{A}$ (2N4905, 2N4914)	60		60		V
$BV_{CE0}$	$I_C=0.2\text{A}$ (2N4906, 2N4915)	80		80		V
$V_{CE}(\text{SAT})$	$I_C=2.5\text{A}, I_B=250\text{mA}$		1.0		1.0	V
$V_{CE}(\text{SAT})$	$I_C=5.0\text{A}, I_B=1.0\text{A}$		1.5		1.5	V
$V_{BE}(\text{ON})$	$V_{CE}=2.0\text{V}, I_C=2.5\text{A}$		1.4		1.4	V
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=2.5\text{A}$	25	100	25	100	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=5.0\text{A}$	7.0	-	7.0	-	
$h_{fe}$	$V_{CE}=10\text{V}, I_C=500\text{mA}, f=1.0\text{kHz}$	40	-	20	-	
$f_T$	$V_{CE}=10\text{V}, I_C=1.0\text{A}, f=1.0\text{MHz}$	4.0		4.0		MHz