

2N4904 2N4905 2N4906 PNP  
2N4913 2N4914 2N4915 NPN

**COMPLEMENTARY SILICON  
POWER TRANSISTORS**



**TO-3 CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N4904, 2N4913 series types are complementary silicon power transistors, manufactured by the epitaxial base process, designed for general purpose amplifier and switching applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Continuous Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance

SYMBOL	2N4904	2N4905	2N4906	UNITS
	2N4913	2N4914	2N4915	
$V_{CBO}$	40	60	80	V
$V_{CEO}$	40	60	80	V
$V_{EBO}$		5.0		V
$I_C$		5.0		A
$I_B$		1.0		A
$P_D$		87.5		W
$T_J, T_{stg}$		-65 to +200		$^\circ\text{C}$
$\theta_{JC}$		2.0		$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	PNP		NPN		UNITS
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=\text{Rated } V_{CBO}$	-	0.1	-	1.0	mA
$I_{CEO}$	$V_{CE}=\text{Rated } V_{CEO}$	-	1.0	-	1.0	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}$	-	0.1	-	1.0	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}, T_C=150^\circ\text{C}$	-	2.0	-	2.0	mA
$I_{EBO}$	$V_{EB}=5.0\text{V}$	-	1.0	-	1.0	mA
$BV_{CEO}$	$I_C=200\text{mA}$ (2N4904, 2N4913)	40	-	40	-	V
$BV_{CEO}$	$I_C=200\text{mA}$ (2N4905, 2N4914)	60	-	60	-	V
$BV_{CEO}$	$I_C=200\text{mA}$ (2N4906, 2N4915)	80	-	80	-	V
$V_{CE(SAT)}$	$I_C=2.5\text{A}, I_B=250\text{mA}$	-	1.0	-	1.0	V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=1.0\text{A}$	-	1.5	-	1.5	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=2.5\text{A}$	-	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

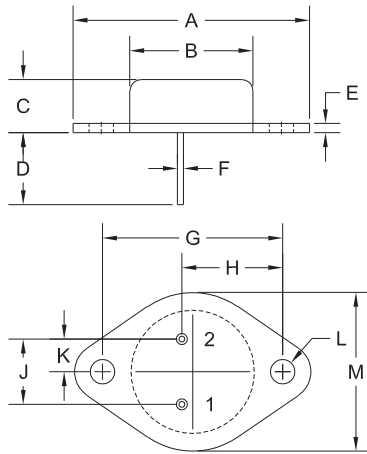
R1 (7-March 2013)

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**TO-3 CASE - MECHANICAL OUTLINE**



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.516	1.573	38.50	39.96
B (DIA)	0.748	0.875	19.00	22.23
C	0.250	0.450	6.35	11.43
D	0.433	0.516	11.00	13.10
E	0.054	0.065	1.38	1.65
F	0.035	0.045	0.90	1.15
G	1.177	1.197	29.90	30.40
H	0.650	0.681	16.50	17.30
J	0.420	0.440	10.67	11.18
K	0.205	0.225	5.21	5.72
L (DIA)	0.151	0.172	3.84	4.36
M	0.984	1.050	25.00	26.67

TO-3 (REV: R2)

R2

**LEAD CODE:**

- 1) Base
- 2) Emitter
- Case) Collector

**MARKING:**

**FULL PART NUMBER**

R1 (7-March 2013)