



## 2N4904 – 2N4905 – 2N4906

### PNP SILICON TRANSISTORS, EPITAXIAL BASE

The 2N4904, 2N4905, 2N4906 are mounted in Jedec TO-3 metal case.  
 They are intended for general-purpose switching and power amplifier applications.  
 Complement to type 2N4913, 2N4914, 2N4915.  
 Compliance to RoHS.

#### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CBO}$	Collector to Base Voltage		2N4904	-40	V
			2N4905	-60	
			2N4906	-80	
$V_{CEO}$	#Collector-Emitter Voltage		2N4904	-40	V
			2N4905	-60	
			2N4906	-80	
$V_{CEX}$	Collector-Base Voltage	$V_{BE}=1.5\text{ V}$	2N4904	-40	V
			2N4905	-60	
			2N4906	-80	
$V_{EBO}$	Emitter-Base Voltage		-5	V	
$I_C$	Collector Current – Continuous		-5	A	
$I_{CM}$	Collector Current – Peak	$t_p=5\text{ ms}$	-10	A	
$I_B$	Base Current – Continuous		-1	A	
$P_{TOT}$	Power Dissipation		87.5	W	
$T_J$	Junction Temperature		200	°C	
$T_{STG}$	Storage Temperature		-65 to +200	°C	

#### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case	2	°C/W
$R_{thJA}$	Junction to Free Air Thermal Resistance	43.7	°C/W

**2N4904 – 2N4905 – 2N4906**
**ELECTRICAL CHARACTERISTICS**

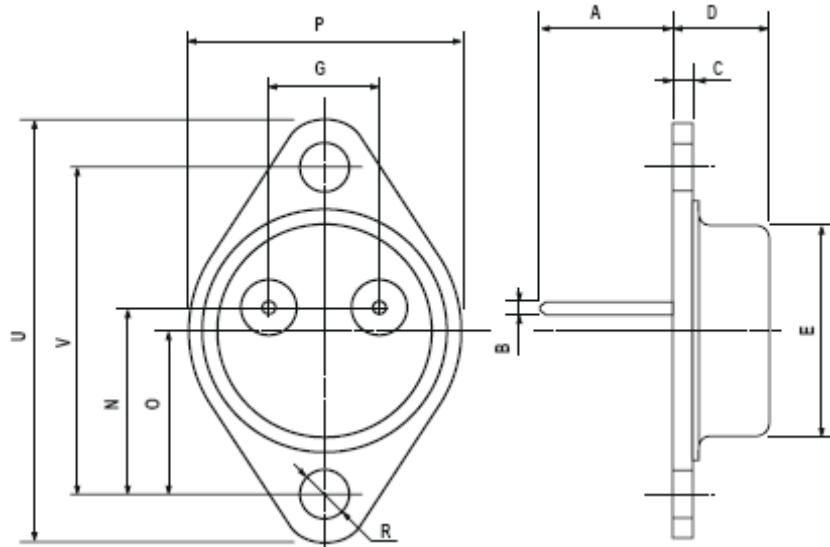
TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{CE(sus)}$	Collector-Emitter Sustaining Voltage	$I_C=200 \text{ mAdc}, I_B=0$	2N4904	-40	-	-	V
			2N4905	-60			
			2N4906	-80			
$I_{CBO}$	Collector-Base cut-off Current	$V_{CE}=-40 \text{ V}, I_E=0$	2N4904	-	-	0.1	mA
		$V_{CE}=-60 \text{ V}, I_E=0$	2N4905	-	-	0.1	
		$V_{CE}=-80 \text{ V}, I_E=0$	2N4906	-	-	0.1	
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=-40 \text{ V}, V_{EB}=1.5 \text{ V}$	2N4904	-	-	-0.1	mA
		$V_{CE}=-40 \text{ V}, V_{EB}=1.5 \text{ V}$ $T_{CASE}=150^\circ\text{C}$		-	-	-2.0	
		$V_{CE}=-60 \text{ V}, V_{EB}=1.5 \text{ V}$	2N4905	-	-	-0.1	
		$V_{CE}=-60 \text{ V}, V_{EB}=1.5 \text{ V}$ $T_{CASE}=150^\circ\text{C}$		-	-	-2.0	
		$V_{CE}=-80 \text{ V}, V_{EB}=1.5 \text{ V}$	2N4906	-	-	-0.1	
		$V_{CE}=-80 \text{ V}, V_{EB}=1.5 \text{ V}$ $T_{CASE}=150^\circ\text{C}$		-	-	-2.0	
$I_{EBO}$	Emitter Cutoff Current	$V_{BE}=5.0 \text{ V}, I_C=0$	2N4904	-	-	-1.0	mA
			2N4905				
			2N4906				
$h_{FE}$	DC Current Gain (*)	$V_{CE}=-2.0 \text{ V}, I_C=-2.5 \text{ A}$	2N4904	25	-	100	V
			2N4905				
			2N4906				
		$V_{CE}=-2.0 \text{ V}, I_C=-5.0 \text{ A}$	2N4904	7	-	-	
			2N4905				
			2N4906				
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=-2.5 \text{ A}, I_B=-0.25 \text{ A}$	2N4904	-	-	-1.0	V
			2N4905				
			2N4906				
		$I_C=-5.0 \text{ A}, I_B=-1.0 \text{ A}$	2N4904	-	-	-1.5	
			2N4905				
			2N4906				
$V_{BE}$	Base-Emitter Voltage (*)	$I_C=-2.5 \text{ A}, V_{CE}=-2.0 \text{ V}$	2N4904	-	-	-1.4	V
			2N4905				
			2N4906				
$f_T$	Transition Frequency	$V_{CE}=-10 \text{ V}, I_C=-1 \text{ A}$ $f=1.0 \text{ MHz}$	2N4904	4	-	-	MHz
			2N4905				
			2N4906				

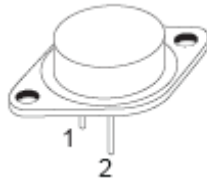
 (\*) Pulse Width  $\approx 300 \mu\text{s}$ , Duty Cycle  $< 2.0\%$

**2N4904 – 2N4905 – 2N4906**
**MECHANICAL DATA CASE TO-3**

DIMENSIONS (mm)		
	min	max
A	11	13.10
B	0.97	1.15
C	1.5	1.65
D	8.32	8.92
F	19	20
G	10.70	11.1
N	16.50	17.20
P	25	26
R	4	4.09
U	38.50	39.30
V	30	30.30



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector



Revised January 2015

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.