



**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	$V_{BE}=1.5 V$	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	$t_p=5 ms$	-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

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**ELECTRICAL CHARACTERISTICS**

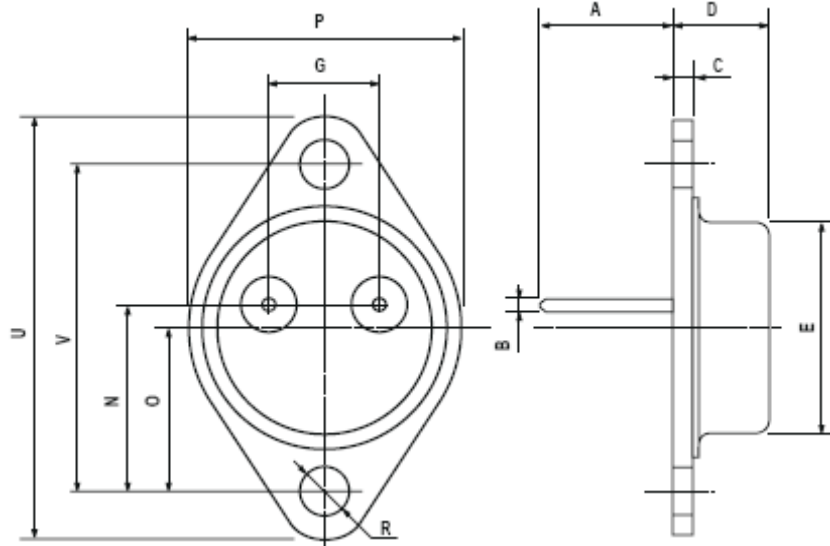
TC=25°C unless otherwise noted

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				

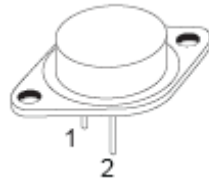
 (\*) Pulse Width  $\approx 300 \mu\text{s}$ , Duty Cycle  $< 2.0\%$

**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



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