



## 2N4901/2N4902/2N4903

# PNP SILICON TRANSISTORS, EPITAXIAL BASE

LF Large signal power amplification  
Switching medium current

### ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit	
$V_{CBO}$	<i>Collector to Base Voltage</i>	2N4901	-40	V	
		2N4902	-60		
		2N4903	-80		
$V_{CEO}$	# <i>Collector-Emitter Voltage</i>	2N4901	-40	V	
		2N4902	-60		
		2N4903	-80		
$V_{CER}$	<i>Collector-Emitter Voltage</i>	2N4901	-40	V	
		2N4902	-60		
		2N4903	-80		
$V_{EBO}$	<i>Emitter-Base Voltage</i>	2N4901	-5.0	V	
		2N4902			
		2N4903			
$V_{CEX}$	<i>Collector-Base Voltage</i>	$V_{BE}=1.5\text{ V}$	2N4901	V	
			2N4902		-60
			2N4903		-80
$I_C$	<i>Collector Current – Continuous</i>	2N4901	-5	A	
		2N4902			
		2N4903			
$I_{CM}$	<i>Collector Current – Peak</i>	$t_p=5\text{ ms}$	2N4901	-10	A
			2N4902		
			2N4903		
$I_B$	<i>Base Current – Continuous</i>	2N4901	-1	A	
		2N4902			
		2N4903			
$P_{TOT}$	<i>Power Dissipation</i>	2N4901	87.5	W	
		2N4902			
		2N4903			
$T_J$	<i>Junction Temperature</i>	2N4901	200	°C	
		2N4902			
		2N4903			
$T_{STG}$	<i>Storage Temperature</i>	2N4901	-65 to +200	°C	
		2N4902			
		2N4903			



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### THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
$R_{thJC}$	Thermal Resistance, Junction to Case	2	°C/W
$R_{thJA}$	Junction to Free Air Thermal Resistance	47.3	°C/W

### ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)	Min	Typ	Mx	Unit	
$V_{CEO(BR)}$	Collector-Emitter Breakdown Voltage)	$I_C=200\text{ mA dc}, I_B=0$	2N4901	-40	-	-	V
			2N4902	-60	-	-	
			2N4903	-80	-	-	
$h_{FE}$	DC Current Gain (*)	$V_{CE}=-2.0\text{ V}, I_C=-1.0\text{ A}$	2N4901 2N4902 2N4903	20	-	80	V
		$V_{CE}=-2.0\text{ V}, I_C=-5.0\text{ A}$	2N4901 2N4902 2N4903	7	-	-	
$I_{CBO}$	Collector-Base cut-off Current	$V_{CE}=-40\text{ V}, I_E=0$	2N4901	-	-	0.1	mA
		$V_{CE}=-60\text{ V}, I_E=0$	2N4902	-	-	0.1	
		$V_{CE}=-80\text{ V}, I_E=0$	2N4903	-	-	0.1	
$I_{CEX}$	Collector Cutoff Current	$V_{CE}=-40\text{ V}, V_{EB}=1.5\text{ V}$	2N4901	-	-	-0.1	mA
		$V_{CE}=-40\text{ V}, V_{EB}=1.5\text{ V}, T_{CASE}=150^\circ\text{C}$		-	-	-2.0	
		$V_{CE}=-60\text{ V}, V_{EB}=1.5\text{ V}$	2N4902	-	-	-0.1	
		$V_{CE}=-60\text{ V}, V_{EB}=1.5\text{ V}, T_{CASE}=150^\circ\text{C}$		-	-	-2.0	
		$V_{CE}=-80\text{ V}, V_{EB}=1.5\text{ V}$	2N4903	-	-	-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	$V_{BE}=5.0\text{ V}, I_C=0$	2N4901 2N4902 2N4903	-	-	-1.0	mA
$H_{fe}$	Forward Current Transfer Ratio (*)	$V_{CE}=-10\text{ V}, I_C=-0.5\text{ A}$ $f=1\text{ MHz}$	2N4901 2N4902 2N4903	20	-	-	V
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	$I_C=-1.0\text{ A}, I_B=-0.1\text{ A}$	2N4901 2N4902 2N4903	-	-	-0.4	V
		$I_C=-5.0\text{ A}, I_B=-1.0\text{ A}$	2N4901 2N4902 2N4903	-	-	-1.5	
$V_{BE}$	Base-Emitter Voltage (*)	$I_C=-1.0\text{ A}, V_{CE}=-2.0\text{ V}$	2N4901 2N4902 2N4903	-	-	-1.2	V

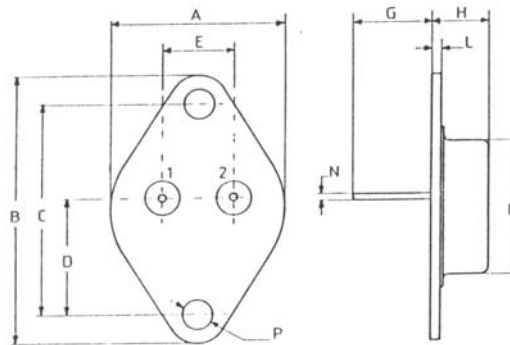
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$V_{BE(SAT)}$	Base-Emitter Saturation Voltage (*)	$I_C = -5.0 \text{ A}$ , $I_B = -1.0 \text{ A}$	2N4901 2N4902 2N4903	-	1.7	-	V
$f_T$	Transition Frequency	$V_{CE} = -10 \text{ V}$ , $I_C = -1.0 \text{ A}$ , $f = 1.0 \text{ kHz}$	2N4901 2N4902 2N4903	4	-	-	MHz
$I_{S/b}$	Second Breakdown Collector Current	$t = 1 \text{ s}$ , $V_{CE} = 40 \text{ V}$ , $T_{CASE} = 100^\circ\text{C}$	2N4901 2N4902 2N4903	1.25	-	-	A

In accordance with JEDEC Registration Data  
 (\*) Pulse Width  $\approx 300 \mu\text{s}$ , Duty Cycle  $< 2.0\%$

### MECHANICAL DATA CASE TO-3

DIMENSIONS		
	mm	inches
A	25,51	1,004
B	38,93	1,53
C	30,12	1,18
D	17,25	0,68
E	10,89	0,43
G	11,62	0,46
H	8,54	0,34
L	1,55	0,6
M	19,47	0,77
N	1	0,04
P	4,06	0,16



Pin 1 :	Base
Pin 2 :	Emitter
Case :	Collector