

# New Jersey Semi-Conductor Products, Inc.

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## COMPLEMENTARY SILICON TRANSISTORS

General Purpose use in power amplifier and switching circuits.

### FEATURES:

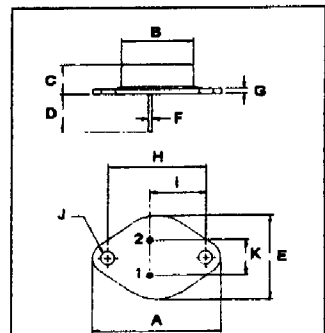
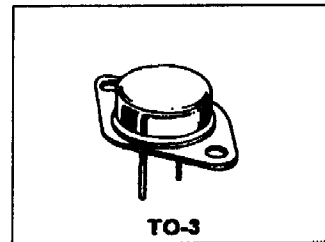
- \*DC Current Gain Specified  
HFE=20 - 80 @  $I_C = 1.0 A$
- \* Low Collector-Emitter Saturation Voltage -  
 $V_{CE(sat)} = 1.5 V$  (Max.) @  $I_C = 5.0 A$

PNP	NPN
2N4901	2N5067
2N4902	2N5068
2N4903	2N5069

5.0 AMPERE  
COMPLEMENTARY SILICON  
POWER TRANSISTORS  
40-80 Volts  
87.5 Watts

### MAXIMUM RATINGS

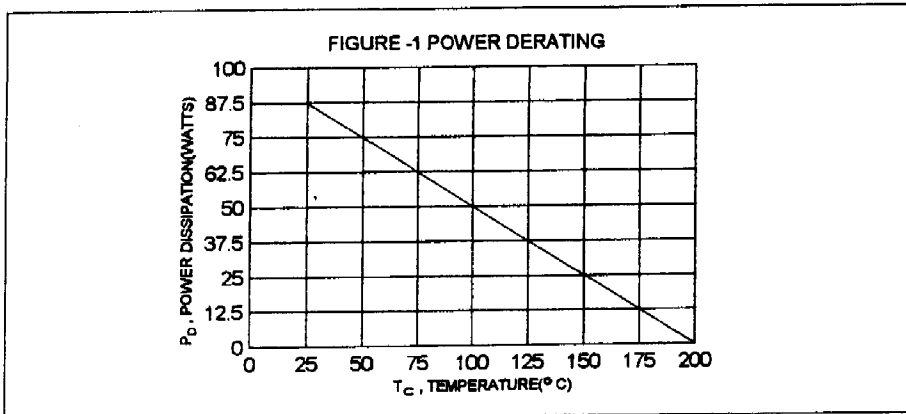
Characteristic	Symbol	2N4901 2N5067	2N4902 2N5068	2N4903 2N5069	Unit
Collector-Emitter Voltage	$V_{CBO}$	40	60	80	V
Collector-Emitter Voltage	$V_{CEO}$	40	60	80	V
Emitter-Base Voltage	$V_{EB}$	5.0			V
Collector Current-Continuous -Peak	$I_C$	5.0 10			A
Base current - Continuous	$I_B$	1.0			A
Total Power Dissipation @ $T_c = 25^\circ C$ Derate above $25^\circ C$	$P_D$	87.5 0.5			W W/ $^\circ C$
Operating and Storage Junction Temperature Range	$T_J, T_{STG}$	- 65 to +200			$^\circ C$



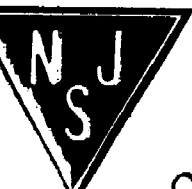
1. PIN 1. BASE  
2. PIN 2. EMITTER  
COLLECTOR(CASE)

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance Junction to Case	$R_{\theta jc}$	2.0	$^\circ C/W$



DIM	MILLIMETERS	
	MIN	MAX
A	38.75	39.98
B	19.28	22.23
C	7.98	9.28
D	11.18	12.19
E	25.20	26.67
F	0.92	1.09
G	1.38	1.62
H	29.90	30.40
I	16.64	17.30
J	3.68	4.36
K	10.67	11.18



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Quality Semi-Conductors

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

Characteristic	Symbol	Min	Max	Unit
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**OFF CHARACTERISTICS**

Collector - Emitter Sustaining Voltage (1) ( $I_C = 200 \text{ mA}$ , $I_B = 0$ ) 2N4901,2N5067 2N4902,2N5068 2N4903,2N5069	$V_{CE(sus)}$	40 60 80		V
Collector Cutoff Current ( $V_{CE} = \text{Rated } V_{CE0}$ , $I_B = 0$ )	$I_{CEO}$		1.0	mA
Collector Cutoff Current ( $V_{CE} = \text{Rated } V_{CE0}$ , $V_{BE(off)} = 1.5 \text{ V}$ ) ( $V_{CE} = \text{Rated } V_{CE0}$ , $V_{BE(off)} = 1.5 \text{ V}$ , $T_c = 150^\circ\text{C}$ )	$I_{CEX}$		0.1 2.0	mA
Collector Cutoff Current ( $V_{CB} = \text{Rated } V_{CB0}$ , $I_E = 0$ )	$I_{CBO}$		0.1	mA
Emitter Cutoff Current ( $V_{EB} = 5.0 \text{ V}$ , $I_C = 0$ )	$I_{EBO}$		1.0	mA

**ON CHARACTERISTICS (1)**

DC Current Gain ( $I_C = 1.0 \text{ A}$ , $V_{CE} = 2.0 \text{ V}$ ) ( $I_C = 5.0 \text{ A}$ , $V_{CE} = 2.0 \text{ V}$ )	$h_{FE}$	20 7.0	80	
Collector-Emitter Saturation Voltage ( $I_C = 1.0 \text{ A}$ , $I_B = 0.1 \text{ A}$ ) ( $I_C = 5.0 \text{ A}$ , $I_B = 1.0 \text{ A}$ )	$V_{CE(sat)}$		0.4 1.5	V
Base-Emitter On Voltage ( $I_C = 1.0 \text{ A}$ , $V_{CE} = 2.0 \text{ V}$ )	$V_{BE(on)}$		1.2	V

**DYNAMIC CHARACTERISTICS**

Current - Gain -Bandwidth Product (2) ( $I_C = 1.0 \text{ A}$ , $V_{CE} = 10 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$f_T$	4.0		MHz
Small-Signal Current Gain ( $I_C = 0.5 \text{ A}$ , $V_{CE} = 10 \text{ V}$ , $f = 1.0 \text{ KHz}$ )	$h_{fe}$	20		

(1) Pulse Test: Pulse width = 300 us , Duty Cycle  $\leq 2.0\%$

(2)  $f_T = |h_{fe}| \cdot f_{test}$