

**Type 2N918**  
**Geometry 0013**  
**Polarity NPN**  
**Qual Level: JAN - JANTXV**

**Generic Part Number:**  
**2N918**

**REF: MIL-PRF-19500/301**

**Features:**

[Request Quotation](#)

- General-purpose low-power NPN silicon transistor.
- Housed in [TO-72](#) case.
- Also available in chip form using the [0013](#) chip geometry.
- The Min and Max limits shown are per [MIL-PRF-19500/301](#) which Semicoa meets in all cases.



[TO-72](#)

**Maximum Ratings**

$T_C = 25^\circ\text{C}$  unless otherwise specified

Rating	Symbol	Rating	Unit
Collector-Emitter voltage	$V_{CEO}$	15	V
Collector-Base Voltage	$V_{CBO}$	30	V
Emitter-Base voltage	$V_{EBO}$	3.0	V
Collector Current, Continuous	$I_C$	50	mA
Power Dissipation, $T_A = 25^\circ\text{C}$	$P_T$	200	mW
Derate above $25^\circ\text{C}$		1.14	mW/ $^\circ\text{C}$
Power Dissipation, $T_A = 25^\circ\text{C}$	$P_T$	300	mW
Derate above $25^\circ\text{C}$		1.71	mW/ $^\circ\text{C}$
Operating Junction Temperature	$T_J$	-65 to +200	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-65 to +200	$^\circ\text{C}$

## Electrical Characteristics

$T_C = 25^\circ\text{C}$  unless otherwise specified

OFF Characteristics	Symbol	Min	Max	Unit
Collector-Base Breakdown Voltage $I_C = 1.0 \mu\text{A}$	$V_{(BR)CBO}$	30	---	V
Collector-Emitter Breakdown Voltage $I_C = 3.0 \text{ mA}$	$V_{(BR)CEO}$	15	---	V
Emitter-Base Breakdown Voltage $I_C = 10 \mu\text{A}$	$V_{(BR)CEO}$	3.0	---	V
Collector-Base Cutoff Current $V_{CB} = 25 \text{ V}$	$I_{CBO1}$	3.0	10	nA
Collector-Base Cutoff Current $V_{CB} = 25 \text{ V}, T_A = 150^\circ\text{C}$	$I_{CBO2}$	---	1	$\mu\text{A}$
Emitter-Base Cutoff Current $V_{EB} = 2.5 \text{ V}$	$I_{EBO}$	---	10	nA

ON Characteristics	Symbol	Min	Max	Unit
<b>Forward Current Transfer Ratio</b>				
$I_C = 500 \mu\text{A}, V_{CE} = 10 \text{ V}$	$h_{FE1}$	10	---	---
$I_C = 3.0 \text{ mA}, V_{CE} = 1.0 \text{ V}$	$h_{FE2}$	20	200	---
$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$	$h_{FE3}$	20	---	---
$I_C = 3.0 \text{ mA}, V_{CE} = 1.0 \text{ V}, T_C = -55^\circ\text{C}$	$h_{FE4}$	10	---	---
<b>Base-Emitter Saturation Voltage</b>				
$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$	$V_{BE(sat)}$	---	1.0	V dc
<b>Collector-Emitter Saturation Voltage</b>				
$I_C = 10 \text{ mA}, I_B = 1.0 \text{ mA}$	$V_{CE(sat)}$	---	0.4	V dc

Small Signal Characteristics	Symbol	Min	Max	Unit
<i>Magnitude of Common Emitter, Small Signal, Short Circuit</i> Forward Current Transfer Ratio $V_{CE} = 10 \text{ V}, I_C = 4.0 \text{ mA}, f = 100 \text{ MHz}$	$ h_{FE} $	6.0	18	---
<i>Noise Figure</i> $V_{CE} = 6 \text{ V}, I_C = 1.0 \text{ mA}, f = 60 \text{ MHz}$	NF	---	6.0	dB
<i>Small Signal Power Gain</i> $V_{CB} = 12 \text{ V}, I_C = 6.0 \text{ mA}, f = 200 \text{ MHz}$	$G_{PE}$	15	---	dB
<i>Collector - Base Time Constant</i> $V_{CB} = 10 \text{ V}, I_E = -4.0 \text{ mA}, f = 79.8 \text{ MHz}$	$r_b' C_c$	---	25	ps
<i>Oscillator Power Output</i> $V_{CB} = 15 \text{ V}, I_C = 8.0 \text{ mA}, f > 500 \text{ MHz}$	$p_o$	---	30	mW
<i>Collector Efficiency</i> $V_{CB} = 15 \text{ V}, I_C = 8.0 \text{ mA}, f > 500 \text{ MHz}$	$\eta$	---	25	---
<i>Open Circuit Output Capacitance</i> $V_{CB} = 0 \text{ V}, I_E = 0, 100 \text{ kHz} < f < 1 \text{ MHz}$	$C_{OBO1}$	---	3.0	pF
<i>Open Circuit Output Capacitance</i> $V_{CB} = 10 \text{ V}, I_E = 0, 100 \text{ kHz} < f < 1 \text{ MHz}$	$C_{OBO2}$	---	1.7	pF
<i>Input Capacitance, Output Open Circuited</i> $V_{EB} = 0.5 \text{ V}, I_C = 0, 100 \text{ kHz} < f < 1 \text{ MHz}$	$C_{IBO}$	---	2.0	pF