

## PNP SMALL SIGNAL SILICON TRANSISTOR

Qualified per MIL-PRF-19500/291

### Devices

<b>2N2906A</b>	<b>2N2907A</b>
<b>2N2906AL</b>	<b>2N2907AL</b>
<b>2N2906AUA</b>	<b>2N2907AUA</b>
<b>2N2906AUB</b>	<b>2N2907AUB</b>

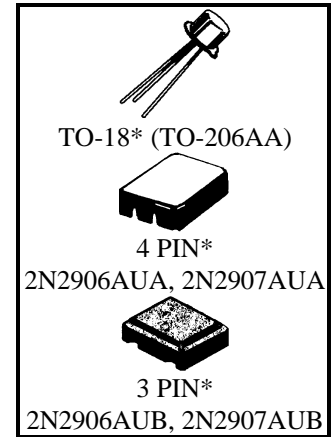
### Qualified Level

<b>JAN</b>
<b>JANTX</b>
<b>JANTXV</b>
<b>JANS</b>

### MAXIMUM RATINGS

Ratings	Symbol	All Types	Unit
Collector-Emitter Voltage	$V_{CEO}$	60	Vdc
Collector-Base Voltage	$V_{CBO}$	60	Vdc
Emitter-Base Voltage	$V_{EBO}$	5.0	Vdc
Collector Current	$I_C$	600	mAdc
Total Power Dissipation	$P_T^{(1)}$ $P_T^{(2/3)}$	@ $T_A = +25^{\circ}C$	0.4
		@ $T_C = +25^{\circ}C$	1.8
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200	$^{\circ}C$

- 1) Derate linearly 2.28 mW/ $^{\circ}C$  for  $T_A > +25^{\circ}C$ .
- 2) Derate linearly 10.3 mW/ $^{\circ}C$  for  $T_C > +25^{\circ}C$ .
- 3) For UA and UB surface mount case outlines:  $P_T = 1.16$  W;  
derate linearly 6.6mW/ $^{\circ}C$  for  $T_C > +25^{\circ}C$ .



\*See appendix A for package outline

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}C$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 10$ mAdc	$V_{(BR)CEO}$	60		Vdc
Collector-Base Cutoff Current $V_{CE} = 50$ Vdc $V_{CE} = 60$ Vdc	$I_{CBO}$		10 10	$\mu$ Adc $\eta$ Adc
Collector-Base Cutoff Current $V_{CE} = 50$ Vdc	$I_{CES}$		50	$\eta$ Adc
Emitter-Base Cutoff Current $V_{EB} = 4.0$ Vdc $V_{EB} = 5.0$ Vdc	$I_{EBO}$		50 10	$\eta$ Adc $\mu$ Adc

**2N2906A, 2N2907A JAN SERIES**

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
<b>ON CHARACTERISTICS <sup>(4)</sup></b>				
Forward-Current Transfer Ratio $I_C = 0.1 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ 2N2906A, UA, UB 2N2907A, UA, UB	$h_{FE}$	40		
$I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ 2N2906A, UA, UB 2N2907A, UA, UB		75	175	
$I_C = 10 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ 2N2906A, UA, UB 2N2907A, UA, UB		40	450	
$I_C = 150 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ 2N2906A, UA, UB 2N2907A, UA, UB		100		
$I_C = 500 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ 2N2906A, UA, UB 2N2907A, UA, UB		40	120	
		100	300	
Collector-Emitter Saturation Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 500 \text{ mA dc}, I_B = 50 \text{ mA dc}$	$V_{CE(sat)}$		0.4 1.6	Vdc
Base-Emitter Saturation Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 500 \text{ mA dc}, I_B = 50 \text{ mA dc}$	$V_{BE(sat)}$	0.6	1.3 2.6	Vdc

**DYNAMIC CHARACTERISTICS**

Forward Current Transfer Ratio $V_{CE} = 10 \text{ V dc}, I_C = 1.0 \text{ mA dc}, f = 1.0 \text{ kHz}$ 2N2906A,UA, UB 2N2907A,UA, UB	$h_{fe}$	40 100		
Magnitude of Small-Signal Forward Current Transfer Ratio $V_{CE} = 20 \text{ V dc}, I_C = 20 \text{ mA dc}, f = 100 \text{ MHz}$	$ h_{fe} $	2.0		
Output Capacitance $V_{CB} = 10 \text{ V dc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{obo}$		8.0	pF
Input Capacitance $V_{EB} = 2.0 \text{ V dc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{ibo}$		30	pF

**SWITCHING CHARACTERISTICS**

Turn-On Time $V_{CC} = 30 \text{ V dc}; I_C = 150 \text{ mA dc}; I_{B1} = 50 \text{ mA dc}$	$t_{on}$		45	ns
Turn-Off Time $V_{CC} = 30 \text{ V dc}; I_C = 150 \text{ mA dc}; I_{B1} = -I_{B2} = 50 \text{ mA dc}$	$t_{off}$		300	ns

(4) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.