

PNP SMALL SIGNAL SILICON TRANSISTOR

Qualified per MIL-PRF-19500/291

Devices

2N2906A	2N2907A
2N2906AL	2N2907AL
2N2906AUA	2N2907AUA
2N2906AUB	2N2907AUB

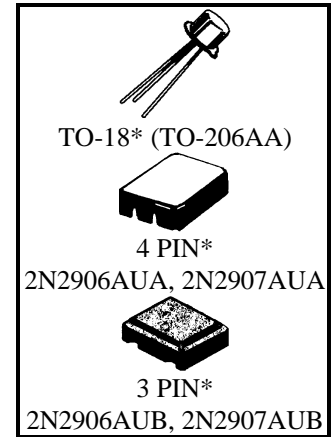
Qualified Level

JAN
JANTX
JANTXV
JANS

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	$P_T^{(1)}$	0.4	W
		$P_T^{(2/3)}$	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	μ Adc η Adc
Collector-Base Cutoff Current $V_{CE} = 50$ Vdc	I_{CES}		50	η Adc
Emitter-Base Cutoff Current $V_{EB} = 4.0$ Vdc $V_{EB} = 5.0$ Vdc	I_{EBO}		50 10	η Adc μ Adc

2N2906A, 2N2907A JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽⁴⁾				
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%.