

PNP SMALL SIGNAL SILICON TRANSISTOR

Qualified per MIL-PRF-19500/291

Devices

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

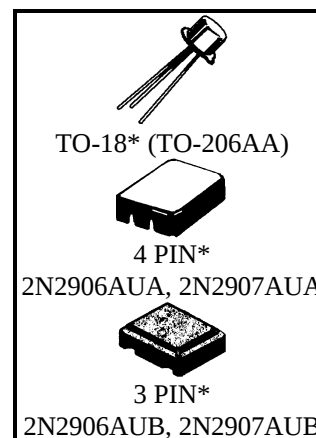
Qualified Level

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 @ $T_A = +25^{\circ}\text{C}$ @ $T_C = +25^{\circ}\text{C}$	$P_T^{(1)}$ $P_T^{(2/3)}$	0.4 1.8	W W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^{\circ}\text{C}$

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



*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽⁴⁾				
Forward-Current Transfer Ratio I _C = 0.1 mA _{dc} , V _{CE} = 10 V _{dc} 2N2906A, UA, UB 2N2907A, UA, UB	h _{FE}	40 75		
I _C = 1.0 mA _{dc} , V _{CE} = 10 V _{dc} 2N2906A, UA, UB 2N2907A, UA, UB		40 100	175 450	
I _C = 10 mA _{dc} , V _{CE} = 10 V _{dc} 2N2906A, UA, UB 2N2907A, UA, UB		40 100		
I _C = 150 mA _{dc} , V _{CE} = 10 V _{dc} 2N2906A, UA, UB 2N2907A, UA, UB		40 100	120 300	
I _C = 500 mA _{dc} , V _{CE} = 10 V _{dc} 2N2906A, UA, UB 2N2907A, UA, UB		40 50		
Collector-Emitter Saturation Voltage I _C = 150 mA _{dc} , I _B = 15 mA _{dc} I _C = 500 mA _{dc} , I _B = 50 mA _{dc}	V _{CE(sat)}		0.4 1.6	V _{dc}
Base-Emitter Saturation Voltage I _C = 150 mA _{dc} , I _B = 15 mA _{dc} I _C = 500 mA _{dc} , I _B = 50 mA _{dc}	V _{BE(sat)}	0.6	1.3 2.6	V _{dc}

DYNAMIC CHARACTERISTICS

Forward Current Transfer Ratio V _{CE} = 10 V _{dc} , I _C = 1.0 mA _{dc} , f = 1.0 kHz 2N2906A,UA, UB 2N2907A,UA, UB	h _{fe}	40 100		
Magnitude of Small-Signal Forward Current Transfer Ratio V _{CE} = 20 V _{dc} , I _C = 20 mA _{dc} , f = 100 MHz	h _{fe}	2.0		
Output Capacitance V _{CB} = 10 V _{dc} , I _E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C _{obo}		8.0	pF
Input Capacitance V _{EB} = 2.0 V _{dc} , I _C = 0, 100 kHz ≤ f ≤ 1.0 MHz	C _{ibo}		30	pF

SWITCHING CHARACTERISTICS

Turn-On Time V _{CC} = 30 V _{dc} ; I _C = 150 mA _{dc} ; I _{B1} = 50 mA _{dc}	t _{on}		45	ns
Turn-Off Time V _{CC} = 30 V _{dc} ; I _C = 150 mA _{dc} ; I _{B1} = -I _{B2} = 50 mA _{dc}	t _{off}		300	ns

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