

PNP SMALL SIGNAL SILICON TRANSISTOR

Qualified per MIL-PRF-19500/291

Devices

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

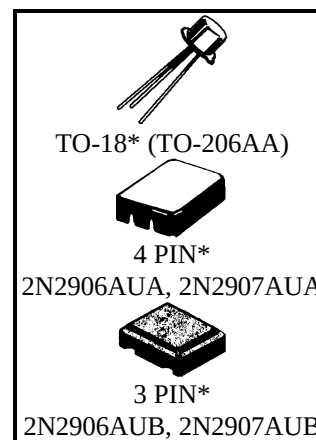
Qualified Level

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 $I_C = 0.1 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N2906A, UA, UB 2N2907A, UA, UB	h_{FE}	40 75		
$I_C = 1.0 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N2906A, UA, UB 2N2907A, UA, UB		40 100	175 450	
$I_C = 10 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N2906A, UA, UB 2N2907A, UA, UB		40 100		
$I_C = 150 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N2906A, UA, UB 2N2907A, UA, UB		40 100	120 300	
$I_C = 500 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}$ 2N2906A, UA, UB 2N2907A, UA, UB		40 50		
Collector-Emitter Saturation Voltage $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{CE(sat)}$		0.4 1.6	Vdc
Base-Emitter Saturation Voltage $I_C = 150 \text{ mAdc}, I_B = 15 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{BE(sat)}$	0.6	1.3 2.6	Vdc

DYNAMIC CHARACTERISTICS

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

SWITCHING CHARACTERISTICS

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

(4) Pulse Test: Pulse Width = 300 μ s, Duty Cycle $\leq$ 2.0%.

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