Microsemi LAWRENCE

TECHNICAL DATA

PNP SMALL SIGNAL SILICON TRANSISTOR

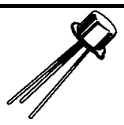
Qualified per MIL-PRF-19500/ 291

Devices		*Qualified Level*
2N2906A	**2N2907A**	**JAN**
2N2906AL	**2N2907AL**	**JANTX**
2N2906AUA	**2N2907AUA**	**JANTXV**
2N2906AUB	**2N2907AUB**	**JANS**

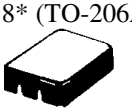
MAXIMUM RATINGS

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	@ $T_A = +25^0C$	$P_T^{(1)}$	0.4	W
	@ $T_C = +25^0C$	$P_T^{(2/3)}$	1.8	W
Operating & Storage Junction Temperature Range		T_J, T_{stg}	-65 to +200	^0C

1) Derate linearly 2.28 mW/^{0}C for $T_A > +25^0C$.
2) Derate linearly 10.3 mW/^{0}C for $T_C > +25^0C$.
3) For UA and UB surface mount case outlines: $P_T = 1.16$ W; derate linearly 6.6mW/^{0}C for $T_C > +25^0C$.



TO-18* (TO-206AA)



4 PIN*
2N2906AUA, 2N2907AUA



3 PIN*
2N2906AUB, 2N2907AUB

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_A = 25^0C$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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	 µAdc ηAdc
Collector-Base Cutoff Current V_{CE} = 50 Vdc	I_{CES}		50	ηAdc
Emitter-Base Cutoff Current V_{EB} = 4.0 Vdc V_{EB} = 5.0 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 mAdc, V_{CE} = 10 Vdc	2N2906A. UA, UB	h_{FE}	40		
	2N2907A, UA, UB		75		
I_C = 1.0 mAdc, V_{CE} = 10 Vdc	2N2906A. UA, UB		40	175	
	2N2907A, UA, UB		100	450	
I_C = 10 mAdc, V_{CE} = 10 Vdc	2N2906A. UA, UB		40		
	2N2907A, UA, UB		100		
I_C = 150 mAdc, V_{CE} = 10 Vdc	2N2906A. UA, UB		40	120	
	2N2907A, UA, UB		100	300	
I_C = 500 mAdc, V_{CE} = 10 Vdc	2N2906A. UA, UB		40		
	2N2907A, UA, UB		50		
Collector-Emitter Saturation Voltage					
I_C = 150 mAdc, I_B = 15 mAdc		$V_{CE(sat)}$		0.4	Vdc
I_C = 500 mAdc, I_B = 50 mAdc				1.6	
Base-Emitter Saturation Voltage					
I_C = 150 mAdc, I_B = 15 mAdc		$V_{BE(sat)}$	0.6	1.3	Vdc
I_C = 500 mAdc, I_B = 50 mAdc				2.6	
DYNAMIC CHARACTERISTICS					
Forward Current Transfer Ratio					
V_{CE} = 10 Vdc, I_C = 1.0 mAdc, f = 1.0 kHz	2N2906A,UA, UB	^{h}fe	40		
	2N2907A,UA, UB		100		
Magnitude of Small-Signal Forward Current Transfer Ratio		$\lvert ^{h}fe \rvert$	2.0		
V_{CE} = 20 Vdc, I_C = 20 mAdc, f = 100 MHz					
Output Capacitance		C_{obo}		8.0	pF
V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz					
Input Capacitance		C_{ibo}		30	pF
V_{EB} = 2.0 Vdc, I_C = 0, 100 kHz ≤ f ≤ 1.0 MHz					
SWITCHING CHARACTERISTICS					
Turn-On Time		^{t}on		45	ηs
V_{CC} = 30 Vdc; I_C = 150 mAdc; I_{B1}= 50 mAdc					
Turn-Off Time		^{t}off		300	ηs
V_{CC} = 30 Vdc; I_C = 150 mAdc; I_{B1} = -I_{B2} = 50 mAdc					

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