



PNP 2N2906 – 2N2906A

GENERAL PURPOSE AMPLIFIERS TRANSISTORS

The 2N2906 and 2N2906A are PNP transistors mounted in TO-18 metal package. They are intended for high speed switching and general purpose applications. NPN complements are 2N2221 and 2N2221A . Compliance to RoHS

ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value		Unit
			2N2906	2N2906A	
V_{CEO}	Collector-Emitter Voltage ($I_B=0$)		-40	-60	V
V_{CBO}	Collector-Base Voltage ($I_E=0$)		-60		V
V_{EBO}	Emitter-Base Voltage ($I_C=0$)		-5		V
I_C	Collector Current		-600		mA
I_{CM}	Peak Collector Current		-800		mA
I_{BM}	Peak Base Current		-200		mA
P_D	Total Power Dissipation	$T_{amb} = 25^\circ$	0.4		W
		$T_{case} = 25^\circ$	1.2		W
T_J	Junction Temperature		200		$^\circ\text{C}$
T_{Stg}	Storage Temperature range		-65 to +150		$^\circ\text{C}$
T_{amb}	Operating Ambient Temperature		-65 to +150		$^\circ\text{C}$

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-a}	Thermal Resistance, Junction to ambient in free air	438	$^\circ\text{C/W}$
R_{thJ-c}	Thermal Resistance, Junction to case	146	$^\circ\text{C/W}$

PNP 2N2906 – 2N2906A

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings	Test Condition(s)		Min	Typ	Max	Unit	
I_{CBO}	Collector Cutoff Current	$V_{CB} = -50\text{ V}$ $I_E = 0$	$T_a = 25^\circ\text{C}$	2N2906A	-	-	-10	nA
				2N2906	-	-	-20	
I_{CBO}	Collector Cutoff Current		$T_a = 150^\circ\text{C}$	2N2906A	-	-	-10	μA
				2N2906	-	-	-20	
I_{EBO}	Emitter Cutoff Current (*)	$V_{EB} = -5\text{ V}, I_C = 0$		2N2906A	-	-	-50	nA
				2N2906	-	-	-	
V_{CEO}	Collector Emitter Breakdown Voltage	$I_C = -10\text{ mA}, I_B = 0$		2N2906A	-60	-	-	V
				2N2906	-40	-	-	
V_{CBO}	Collector Base Breakdown Voltage	$I_C = -10\text{ }\mu\text{A}, I_E = 0$		2N2906A	-60	-	-	V
				2N2906	-60	-	-	
V_{EBO}	Emitter Base Breakdown Voltage	$I_E = -10\text{ }\mu\text{A}, I_C = 0$		2N2906A	-5	-	-	V
				2N2906	-5	-	-	
h_{FE}	DC Current Gain		$I_C = -0.1\text{ mA}, V_{CE} = -10\text{ V}$	2N2906A	40	-	-	-
				2N2906	20	-	-	
			$I_C = -1\text{ mA}, V_{CE} = -10\text{ V}$	2N2906A	40	-	-	
				2N2906	25	-	-	
			$I_C = -10\text{ mA}, V_{CE} = -10\text{ V}$	2N2906A	40	-	-	
				2N2906	35	-	-	
			$I_C = -150\text{ mA}, V_{CE} = -10\text{ V}$	2N2906A	40	-	120	
				2N2906	40	-	-	
			$I_C = -500\text{ mA}, V_{CE} = -10\text{ V}$	2N2906A	40	-	-	
				2N2906	20	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)		$I_C = -150\text{ mA}, I_B = -15\text{ mA}$	2N2906A	-	-	-0.4	V
				2N2906	-	-	-1.6	
			$I_C = -500\text{ mA}, I_B = -50\text{ mA}$	2N2906A	-	-	-1.3	
				2N2906	-	-	-2.6	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)		$I_C = -150\text{ mA}, I_B = -15\text{ mA}$	2N2906A	-	-	-1.3	
				2N2906	-	-	-2.6	
			$I_C = -500\text{ mA}, I_B = -50\text{ mA}$	2N2906A	-	-	-1.3	
				2N2906	-	-	-2.6	
f_T	Transition frequency	$I_C = -50\text{ mA}, V_{CE} = -20\text{ V}$ $f = 100\text{ MHz (*)}$		2N2906A	200	-	-	MHz
				2N2906	200	-	-	
t_d	Delay time	$I_C = -150\text{ mA}, I_B = -15\text{ mA}$		2N2906A	-	-	10	ns
t_r	Rise time	$-V_{CC} = -30\text{ V}$		2N2906	-	-	40	
C_c	Collector capacitance	$I_E = I_e = 0, V_{CB} = -10\text{ V}$ $f = 1\text{ MHz}$		2N2906A	-	-	8	μF
				2N2906	-	-	8	
C_e	Emitter capacitance	$I_C = I_c = 0, V_{EB} = -2\text{ V}$ $f = 1\text{ MHz}$		2N2906A	-	-	30	μF
				2N2906	-	-	30	

(*) Pulse conditions : $t_p < 300\text{ }\mu\text{s}$, $\delta = 2\%$

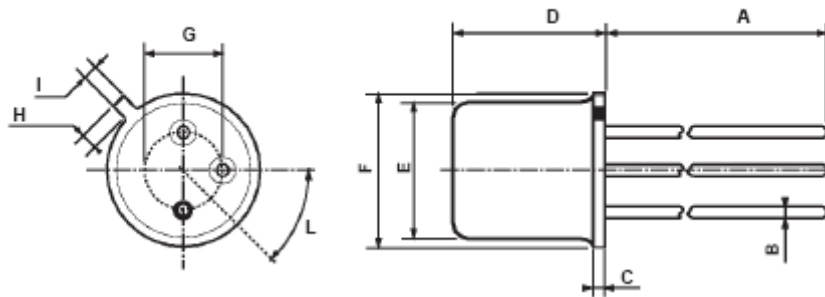
PNP 2N2906 – 2N2906A

SWITCHING TIME

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
t_{on}	Turn-on time	$I_{Con} = -150 \text{ mA}$ $I_{Bon} = -15 \text{ mA}$ $I_{Boff} = 15 \text{ mA}$	-	-	45	ns
t_d	Delay time		-	-	15	
t_r	Rise time		-	-	35	
t_{off}	Turn-off time		-	-	300	
T_s	Storage time		-	-	250	
T_f	Fall time		-	-	50	

ECHANICAL DATA CASE TO-18 (PNP)

DIMENSIONS (mm)		
	min	max
A	12.7	-
B	-	0.49
C	0.9	-
D	-	5.3
E	-	4.9
F	-	5.8
G	2.54	-
H	-	1.2
I	-	1.16
L	45°	-



Pin 1 :	emitter
Pin 2 :	base
Pin 3 :	Collector
Case :	Collector

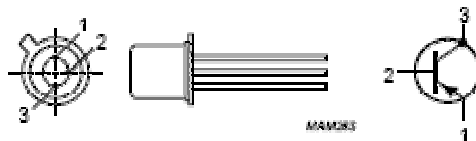


Fig.1 Simplified outline (TO-18) and symbol.

Revised August 2012

Information furnished is believed to be accurate and reliable. However, Comset Semiconductors assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. Data are subject to change without notice. Comset Semiconductors makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Comset Semiconductors assume any liability arising out of the application or use of any product and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Comset Semiconductors' products are not authorized for use as critical components in life support devices or systems.