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°	0.4		W
		T_{case}= 25°	1.2		W
T_J	Junction Temperature		200		°C
T_{Stg}	Storage Temperature range		-65 to +150		°C
T_{amb}	Operating Ambient Temperature		-65 to +150		°C

THERMAL CHARACTERISTICS

Symbol	Ratings	Value	Unit
R_{thJ-a}	Thermal Resistance, Junction to ambient in free air	438	°C/W
R_{thJ-c}	Thermal Resistance, Junction to case	146	°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 V, I_E= 0	T_a= 25°C	2N2906A	-	-	-10	nA
				2N2906	-	-	-20	
I_{CBO}	Collector Cutoff Current		T_a= 150°C	2N2906A	-	-	-10	µA
				2N2906	-	-	-20	
I_{EBO}	Emitter Cutoff Current (*)	V_{EB}= -5 V, I_C= 0		2N2906A	-	-	-50	nA
				2N2906				
V_{CEO}	Collector Emitter Breakdown Voltage	I_C= -10 mA, I_B= 0		2N2906A	-60	-	-	V
				2N2906	-40	-	-	
V_{CBO}	Collector Base Breakdown Voltage	I_C= -10 µA, I_E= 0		2N2906A	-60	-	-	V
				2N2906				
V_{EBO}	Emitter Base Breakdown Voltage	I_E= -10 µA, I_C= 0		2N2906A	-5	-	-	V
				2N2906				
h_{FE}	DC Current Gain	I_C= -0.1 mA, V_{CE}= -10 V		2N2906A	40	-	-	-
				2N2906	20	-	-	
		I_C= -1 mA, V_{CE}= -10 V		2N2906A	40	-	-	
				2N2906	25	-	-	
		I_C= -10 mA, V_{CE}= -10 V		2N2906A	40	-	-	
				2N2906	35	-	-	
		I_C= -150 mA, V_{CE}= -10 V		2N2906A	40	-	120	
				2N2906				
		I_C= -500 mA, V_{CE}= -10 V		2N2906A	40	-	-	
				2N2906	20	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)	I_C= -150 mA, I_B= -15 mA		2N2906A	-	-	-0.4	V
				2N2906				
		I_C= -500 mA, I_B= -50 mA		2N2906A	-	-	-1.6	
				2N2906				
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)	I_C= -150 mA, I_B= -15 mA		2N2906A	-	-	-1.3	
				2N2906				
		I_C= -500 mA, I_B= -50 mA		2N2906A	-	-	-2.6	
				2N2906				
f_T	Transition frequency	I_C=-50 mA, V_{CE}=-20 V f= 100MHz (*)		2N2906A	200	-	-	MHz
				2N2906				
t_d	Delay time	I_C=-150 mA ,I_B =-15 mA -V_{CC}=-30 V		2N2906A	-	-	10	ns
t_r	Rise time			2N2906	-	-	40	
C_c	Collector capacitance	I_E= I_e = 0 ,V_{CB}= -10 V f = 1 MHz		2N2906A	-	-	8	pF
				2N2906				
C_e	Emitter capacitance	I_C= I_c = 0 ,V_{EB}= -2 V f = 1 MHz		2N2906A	-	-	30	pF
				2N2906				

(*) Pulse conditions : tp < 300 µs, δ =2%

PNP 2N2906 – 2N2906A

SWITCHING TIME

Symbol	Ratings	Test Condition(s)	Min	Typ	Max	Unit
t_{on}	Turn-on time	I_{Con}= -150 mA I_{Bon} = -15 mA I_{Boff}= 15 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

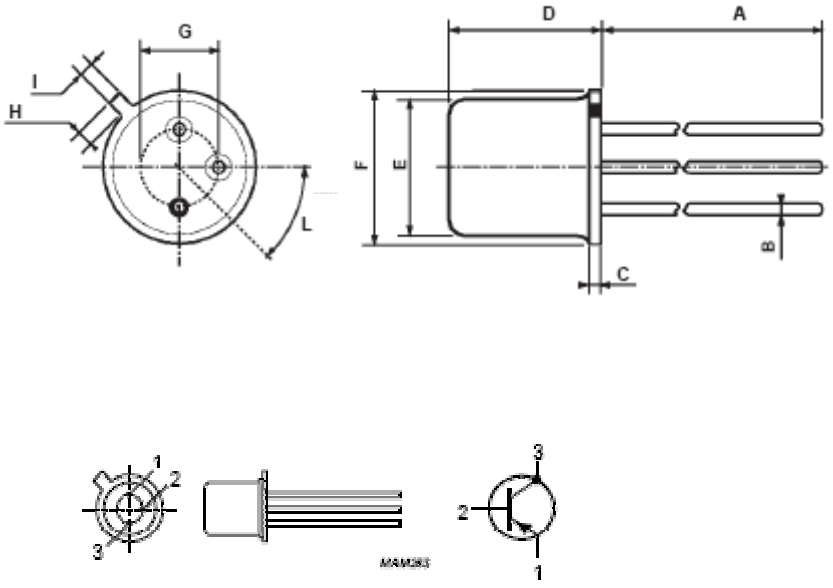

Fig.1 Simplified outline (TO-18) and symbol.

Revised August 2012