

# Comchip 2N3906-G Transistor Datasheet

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## Features

- PNP silicon epitaxial planar transistor for switching and amplifier application.
- As complementary type, the NPN transistor 2N3904-G is recommended.
- This transistor is available in the SOT-23 case with the type designation MMBT3906-G.

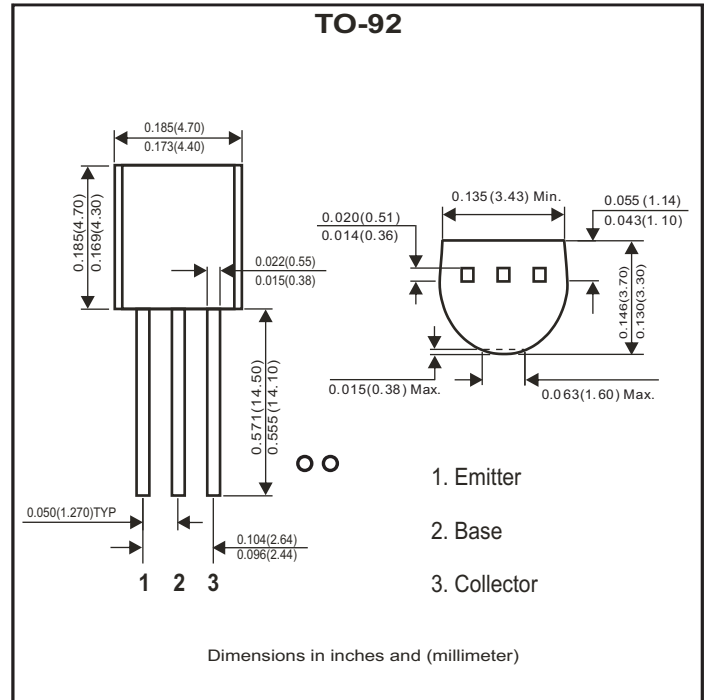
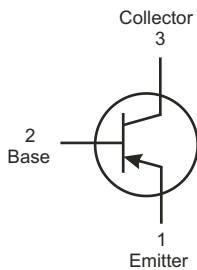
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## 2N3906-G (PNP) RoHS Device

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- As complementary type, the NPN transistor 2N3904-G is recommended.
- This transistor is available in the SOT-23 case with the type designation MMBT3906-G.



### Maximum Ratings (at TA=25°C unless otherwise noted)

Parameter	Symbol	Min	Max	Unit
Collector-Base voltage	V <sub>CBO</sub>		-40	V
Collector-Emitter voltage	V <sub>CEO</sub>		-40	V
Emitter-Base voltage	V <sub>EBO</sub>		-5	V
Collector Current-Continuous	I <sub>c</sub>		-0.2	A
Collector Dissipation	P <sub>c</sub>		0.625	W
Storage Temperature and Junction Temperature	T <sub>STG</sub> , T <sub>J</sub>	-55	+150	°C

## Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Max	Unit
Collector-Base breakdown voltage	$I_C = -10\mu A$ , $I_E = 0$	$V_{(BR)CBO}$	-40		V
Collector-Emitter breakdown voltage	$I_C = -1mA$ , $I_B = 0$	$V_{(BR)CEO}$	-40		V
Emitter-Base breakdown voltage	$I_E = -10\mu A$ , $I_C = 0$	$V_{(BR)EBO}$	-5		V
Collector cut-off current	$V_{CB} = -40V$ , $I_E = 0$	$I_{CBO}$		-0.1	$\mu A$
Collector cut-off current	$V_{CE} = -30V$ , $V_{BE(off)} = -3V$	$I_{CEX}$		-50	$\mu A$
Emitter cut-off current	$V_{EB} = -5V$ , $I_C = 0$	$I_{EBO}$		-0.1	$\mu A$
DC current gain	$V_{CE} = -1V$ , $I_C = -10mA$	$h_{FE(1)}$	100	400	
	$V_{CE} = -1V$ , $I_C = -50mA$	$h_{FE(2)}$	60		
	$V_{CE} = -1V$ , $I_C = -100mA$	$h_{FE(3)}$	30		
Collector-Emitter saturation voltage	$I_C = -50mA$ , $I_B = -5mA$	$V_{CE(sat)}$		-0.4	V
Base-emitter saturation voltage	$I_C = -50mA$ , $I_B = -5mA$	$V_{BE(sat)}$		-0.95	V
Transition frequency	$V_{CE} = -20V$ , $I_C = -10mA$ $f = 100MHz$	$f_T$	250		MHz
Delay time	$V_{CC} = -3V$ , $V_{BE} = -0.5V$	$t_d$		35	nS
Rise time	$I_C = -10mA$ , $I_{B1} = -1mA$	$t_r$		35	nS
Storage time	$V_{CC} = -3V$ , $I_C = -10mA$	$t_s$		225	nS
Fall time	$I_{B1} = I_{B2} = -1mA$	$t_f$		75	nS

## Classification of $h_{FE(1)}$

Rank	O	Y	G
Range	100-200	200-300	300-400

## RATING AND CHARACTERISTIC CURVES (2N3906-G)

Fig.1 -  $I_c$ - $V_{ce}$

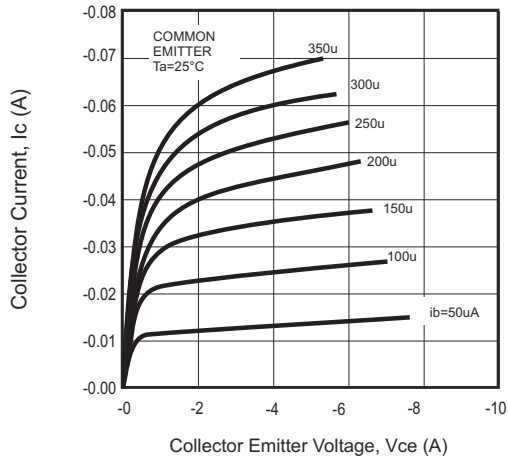


Fig.2 -  $V_{ce}$ - $I_c$

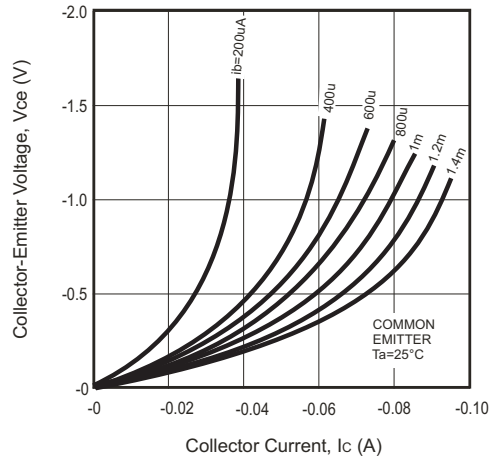


Fig.3 -  $V_{ce(sat)}$ - $I_c$   
 $V_{be(sat)}$ - $I_c$

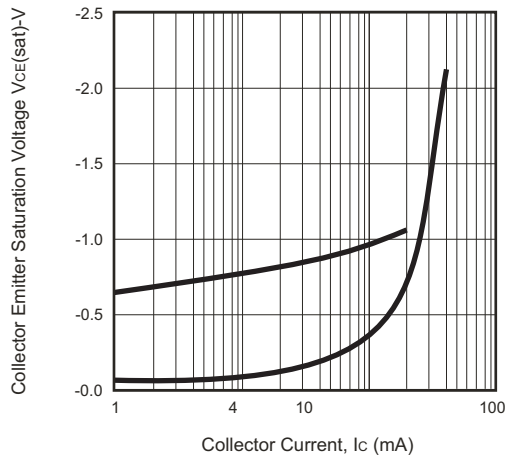


Fig.4 -  $h_{FE}$ - $I_c$

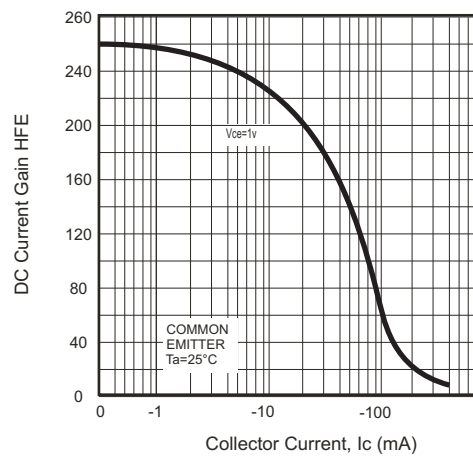
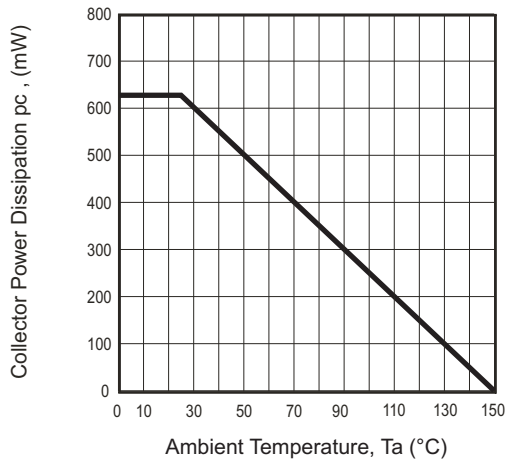


Fig.5 -  $P_c$ - $T_a$



## Standard Packaging

Case Type	Bag	BOX	CARTON
	(EA)	(EA)	(EA)
TO-92	1000	10000	100000