General Purpose Transistor

SMD Diodes Specialist

2N3906-G (PNP)

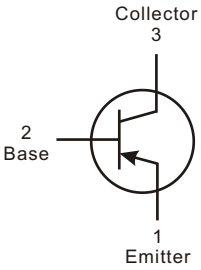
RoHS Device

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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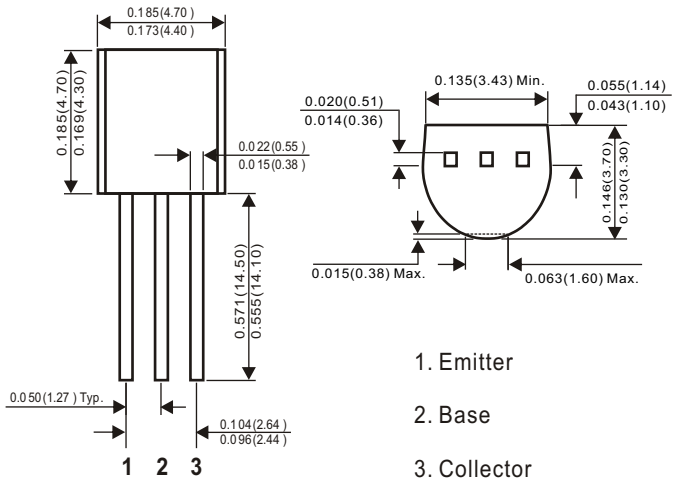

1. Emitter
2. Base
3. Collector

Dimensions in inches and (millimeter)

Maximum Ratings(T_A=25oC unless otherwise noted)

Parameter	Symbol	Min	Max	Unit
Collector-Base voltage	V_{CBO}		-40	V
Collector-Emitter voltage	V_{CEO}		-40	V
Emitter-Base voltage	V_{EBO}		-5	V
Collector current-Continuous	I_C		-0.2	A
Collector dissipation	P_C		0.625	W
Storage temperature and junction temperature	T_{STG} , T_J	-55	+150	°C

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

Parameter	Conditions	Symbol	Min	Max	Unit
Collector-Base breakdown voltage	I_C =-100μA , 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 =-100μA , I_C=0	$V_{(BR)EBO}$	-5		V
Collector cut-off current	V_{CB}=-40V , I_E=0	I_{CBO}		-0.1	μA
Collector cut-off current	V_{CE}=-40V , I_B=0	I_{CEO}		-0.1	μA
Emitter cut-off current	V_{EB}=-5V , I_C=0	I_{EBO}		-0.1	μA
DC current gain	V_{CE}=-1V , I_C=-0.1mA	$h_{FE(1)}$	60		
	V_{CE}=-1V , I_C=-1mA	$h_{FE(2)}$	80		
	V_{CE}=-1V , I_C=-10mA	$h_{FE(3)}$	100	300	
	V_{CE}=-1V , I_C=-50mA	$h_{FE(4)}$	60		
	V_{CE}=-1V , I_C=-100mA	$h_{FE(5)}$	30		
Collector-Emitter saturation voltage	I_C=-10mA , I_B=-1mA	V_{CE}(sat)		-0.25	V
	I_C=-50mA , I_B=-5mA			-0.4	V
Base-Emitter saturation voltage	I_C=-10mA , I_B=-1mA	V_{BE}(sat)	-0.65	-0.85	V
	I_C=-50mA , I_B=-5mA			-0.95	V
Output capacitance	V_{CB}=-5V , I_E=0 , f=100KHz	C_{obo}		4.5	pF
Input capacitance	V_{EB}=-0.5V , I_E=0 , f=100KHz	C_{ibo}		10	pF
Noise figure	V_{CE}=-5V , I_C=100μA F=1KHz , RS=1KΩ	NF		4	dB
Transition frequency	V_{CE}=-20V , I_C=-10mA f=100MHz	f_T	250		MHz
Delay time	V_{CC}=-3V , V_{BE}=-0.5V	td		35	nS
Rise time	I_C=-10mA , I_{B1}=-1mA	tr		35	nS
Storage time	V_{CC}=-3V , I_C=-10mA	ts		225	nS
Fall time	I_{B1}=I_{B2}=-1mA	tf		75	nS

Classification of hFE(3)

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

Typical Characteristics (2N3906-G)

Fig.1 DC current gain

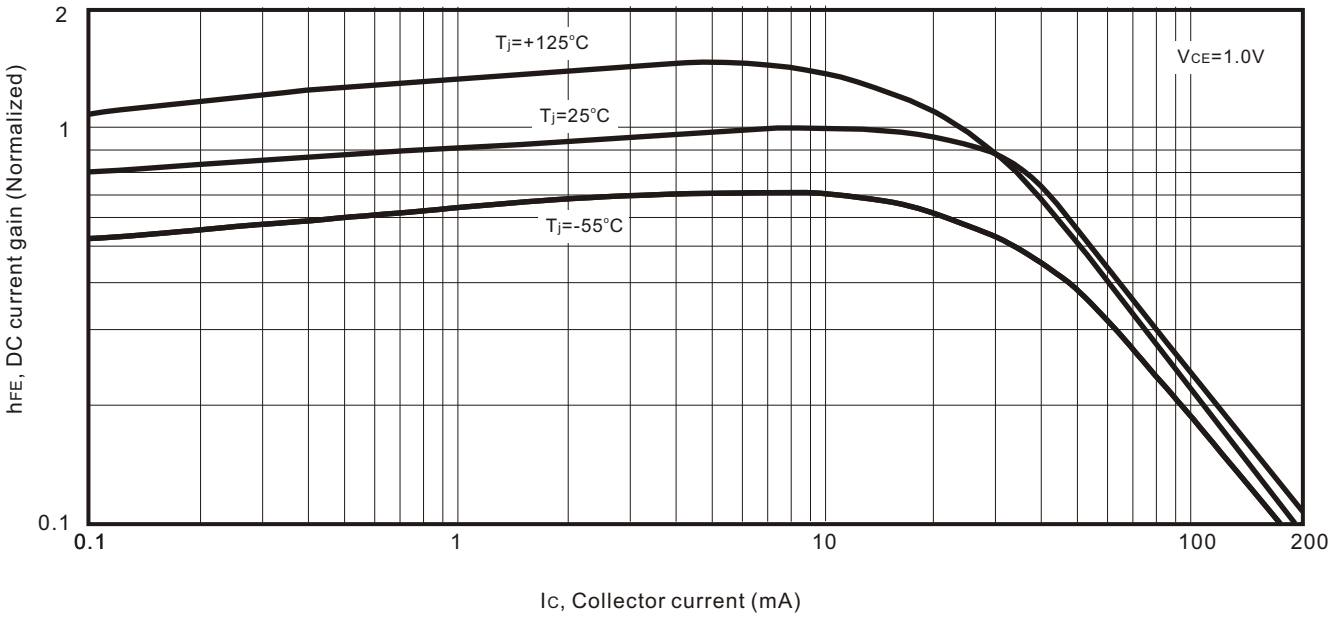

Fig.2 “ON” Voltages