

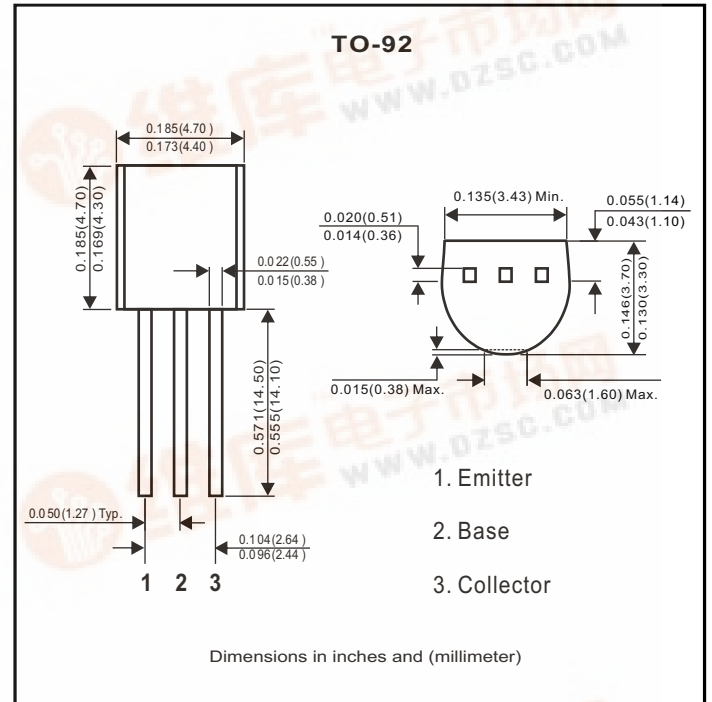
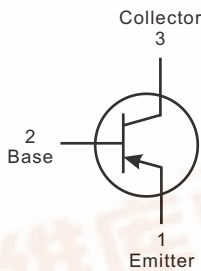
General Purpose Transistor



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.



Maximum Ratings($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Min	Max	Unit
Collector-Base voltage	V_{CB0}		-40	V
Collector-Emitter voltage	V_{CE0}		-40	V
Emitter-Base voltage	V_{EB0}		-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	$^{\circ}\text{C}$

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Electrical Characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

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

Classification of $h_{FE(3)}$

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

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Typical Characteristics (2N3906-G)

Fig.1 DC current gain

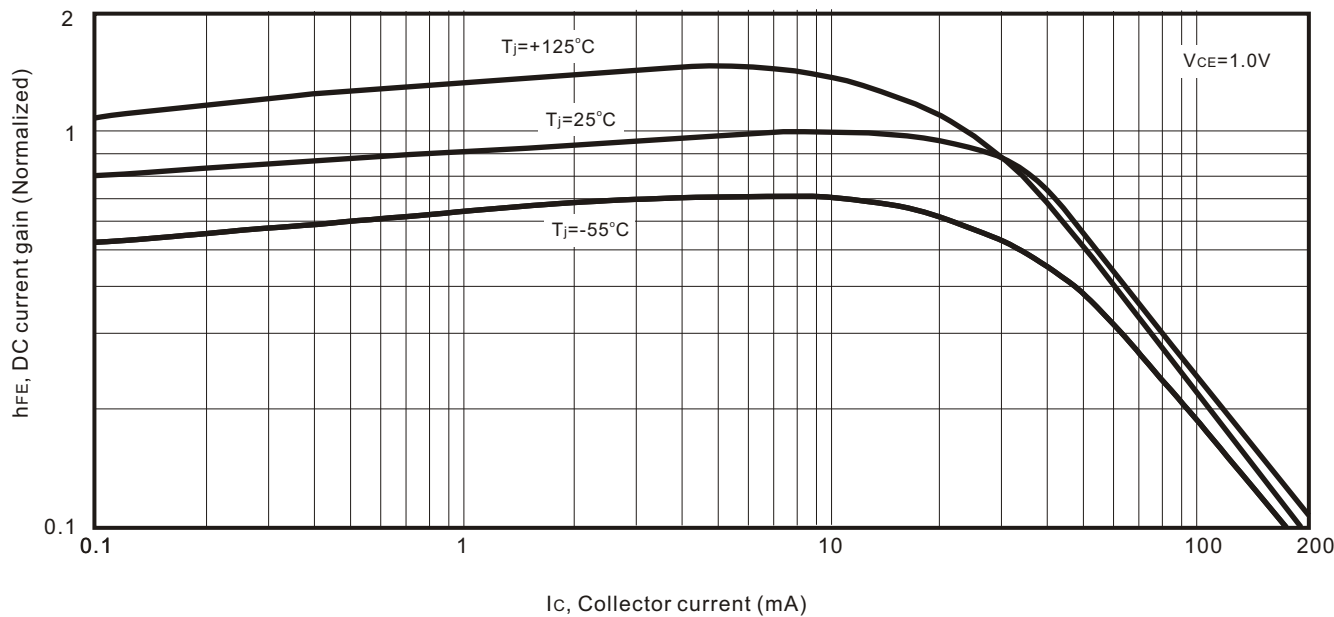


Fig.2 "ON" Voltages

