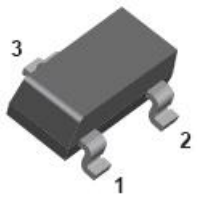
Leading Circuit Protection
Products and Solutions

MMBT3906
PNP General Purpose Transistor

Features

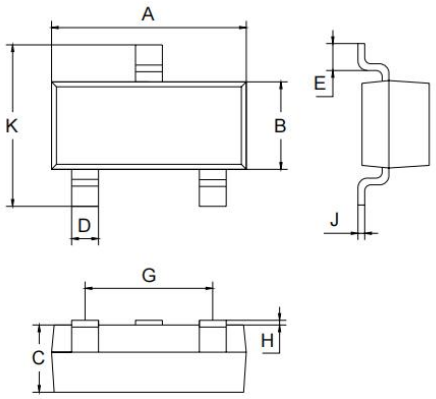
- Epitaxial planar die construction .
- Complementary PNP type available MMBT3904.
- Collector Current Capability I_{CM} =200mA.
- Low Voltage(Max:-40V).



1. BASE
2. EMITTER
3. COLLECTOR

Applications

- Ideal for medium power amplification and switching.



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

Ordering Information

Type No.	Marking	Package Code
MMBT3906	**2A**	**SOT-23**

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	Value	UNIT
V_{CBO}	**collector-base voltage**	open emitter	-40	V
V_{CEO}	**collector-emitter voltage**	open base	-40	V
V_{EBO}	**emitter-base voltage**	open collector	-6	V
I_C	**collector current (DC)**		-100	mA
I_{CM}	**peak collector current**		-200	mA
I_{BM}	**peak base current**		-100	mA
P_{tot}	**total power dissipation**	Tamb≤25°C	250	mW
T_{stg}	**storage temperature**		-65 to +150	°C
T_j	**junction temperature**		150	°C
T_{amb}	**operating ambient temperature**		-65 to +150	°C

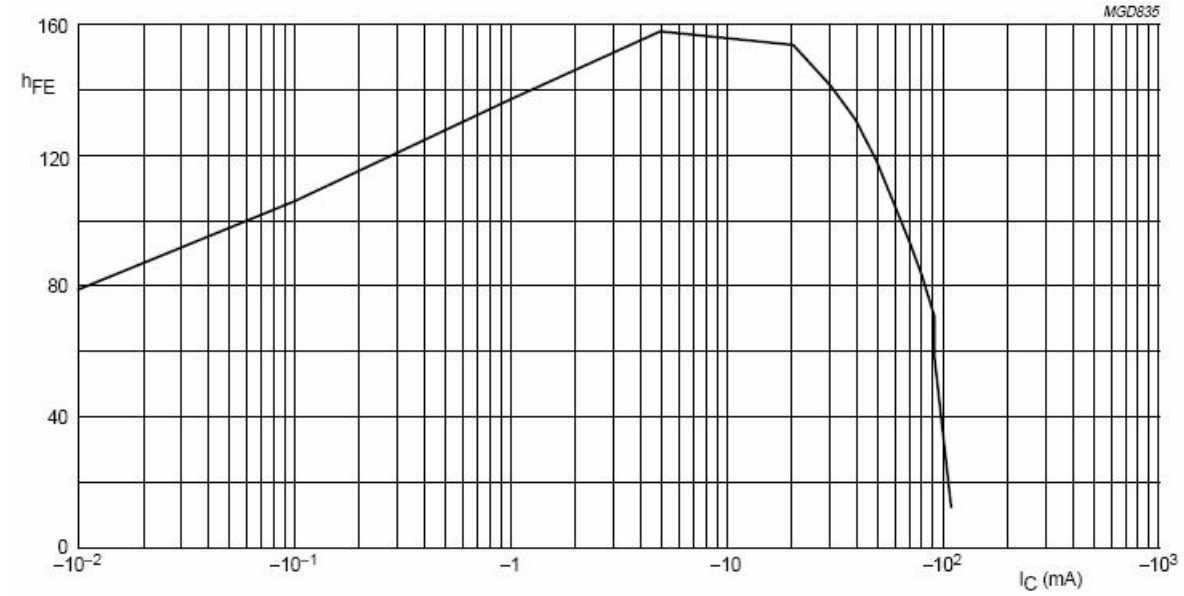
Note Transistor mounted on an FR4 printed-circuit board.

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	**collector cut-off current**	I_E = 0; V_{CB} = -30 V	-	-50	nA
I_{EBO}	**emitter cut-off current**	I_C = 0; V_{EB} = 6 V	-	-50	nA
h_{FE}	**DC current gain**	V_{CE} = -1V; I_C= -0.1mA I_C = -1mA I_C = -10mA I_C = -50mA I_C = -100mA	 60 80 100 60 30	 - - 300 - -	
V_{CEsat}	**collector-emitter saturation voltage**	I_C = -10mA; I_B = 1mA	-	-200	mV
		I_C = -50mA; I_B = -5mA	-	-300	mV
V_{BEsat}	**base-emitter saturation voltage**	I_C = -10mA; I_B = -1mA	-	-850	mV
		I_C = -50mA; I_B = -5mA	-	-950	mV
C_c	**collector capacitance**	I_E = I_e= 0; V_{CB} = -5 V; f = 1 MHz	-	4.5	pF
C_e	**emitter capacitance**	I_C = I_c= 0; V_{EB} = -500 mV; f = 1 MHz	-	10	pF
f_T	**transition frequency**	I_C = -10mA; V_{CE} = -20 V; f = 100MHz	250	-	MHz
NF	**noise figure**	I_C = -100pA; V_{CE} = -5V; R_S = 1 kQ;f = 10Hz to15.7 kHz	-	4	dB
Switching times (between 10% and 90% levels);					
t_{on}	**Turn-on time**	I_{Con}= -10mA; I_{Bon} = -1mA; I_{Boff}= -1mA	-	65	ns
t_d	**delay time**		-	35	ns
t_r	**rise time**		-	35	ns
t_{off}	**turn-off time**		-	300	ns
t_s	**storage time**		-	225	ns
t_r	**fall time**		-	75	ns

Note Pulse test: tp≤300 ms; d≤0.02.

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified



V_{CE} = −1 V.

DC current gain; typical values.

Device	Package	Shipping
MMBT3906	SOT-23	3000/Tape&Reel