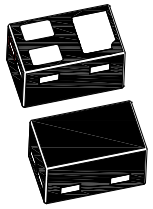
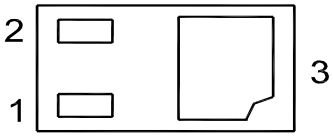
MMBT3906BP

PNP Silicon General Purpose Transistor

for switching and amplifier applications.





Bottom view

1. Base 2. Emitter 3. Collector

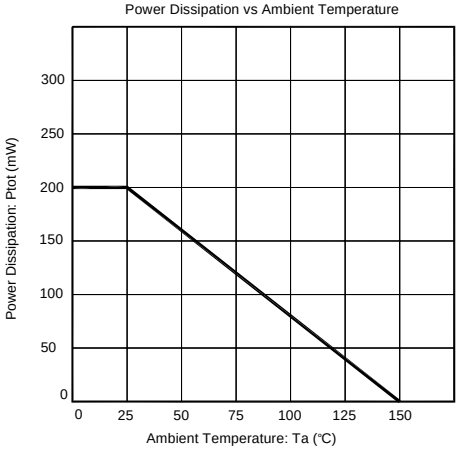
DFN1006-3B Plastic Package

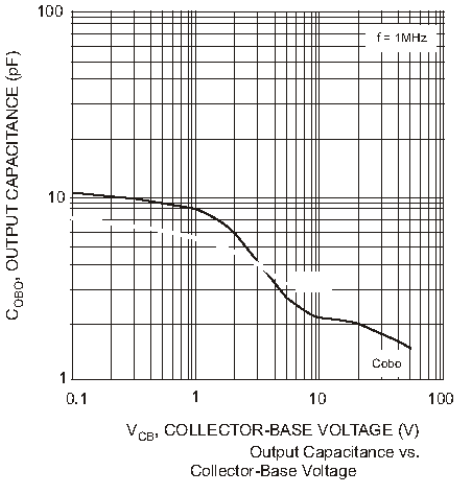
Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	40	V
Collector Emitter Voltage	$-V_{CEO}$	40	V
Emitter Base Voltage	$-V_{EBO}$	6	V
Collector Current	$-I_C$	200	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

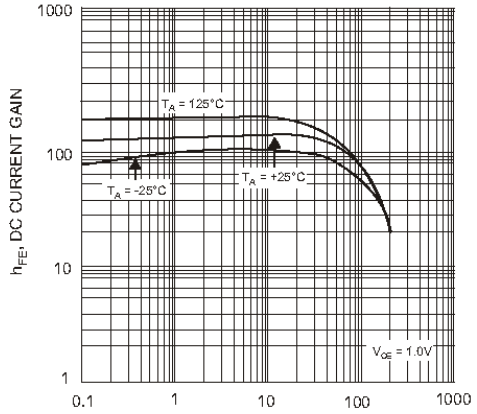
Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
DC Current Gain				
at $-V_{CE}$ = 1 V, $-I_C$ = 0.1 mA	h_{FE}	60	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 1 mA	h_{FE}	80	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 10 mA	h_{FE}	100	300	-
at $-V_{CE}$ = 1 V, $-I_C$ = 50 mA	h_{FE}	60	-	-
at $-V_{CE}$ = 1 V, $-I_C$ = 100 mA	h_{FE}	30	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 30 V	$-I_{CBO}$	-	50	nA
Emitter Base Cutoff Current at $-V_{EB}$ = 6 V	$-I_{EBO}$	-	50	nA
Collector Base Breakdown Voltage at $-I_C$ = 10 µA	$-V_{(BR)CBO}$	40	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 1 mA	$-V_{(BR)CEO}$	40	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 10 µA	$-V_{(BR)EBO}$	6	-	V
Collector Emitter Saturation Voltage				
at $-I_C$ = 10 mA, $-I_B$ =1 mA	$-V_{CE(sat)}$	-	0.25	V
at $-I_C$ = 50 mA, $-I_B$ = 5 mA		-	0.4	
Base Emitter Saturation Voltage				
at $-I_C$ = 10 mA, $-I_B$ = 1 mA	$-V_{BE(sat)}$	0.65	0.85	V
at $-I_C$ = 50 mA, $-I_B$ = 5 mA		-	0.95	
Current Gain Bandwidth Product at $-V_{CE}$ = 20 V, $-I_C$ = 10 mA, f = 100 MHz	f_T	250	-	MHz
Output Capacitance at $-V_{CB}$ = 5 V, I_E = 0, f = 1 MHz	C_{obo}	-	4.5	pF
Delay Time at $-V_{CC}$ = 3 V, $-V_{BE}$ = 0.5 V, $-I_C$ = 10 mA, $-I_{B1}$ = 1 mA	t_d	-	35	ns
Rise Time at $-V_{CC}$ = 3 V, $-V_{BE}$ = 0.5 V, $-I_C$ = 10 mA, $-I_{B1}$ = 1 mA	t_r	-	35	ns
Storage Time at $-V_{CC}$ = 3 V, $-I_C$ = 10 mA, $-I_{B1}$ = I_{B2} = 1 mA	t_s	-	225	ns
Fall Time at $-V_{CC}$ = 3 V, $-I_C$ = 10 mA, $-I_{B1}$ = I_{B2} = 1 mA	t_f	-	75	ns

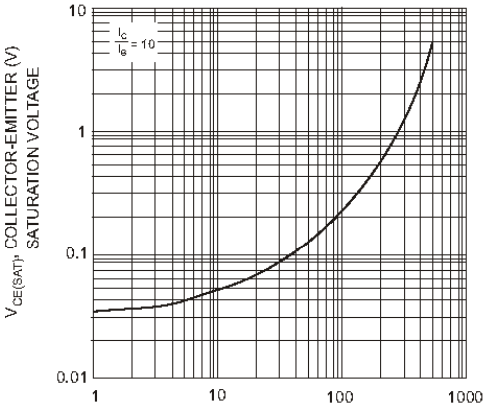




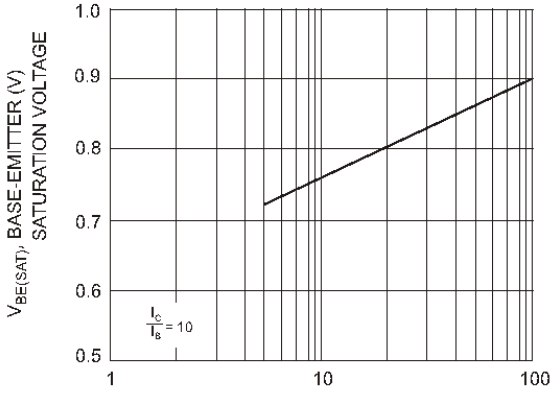
Output Capacitance vs.
Collector-Base Voltage



Typical DC Current Gain vs
Collector Current



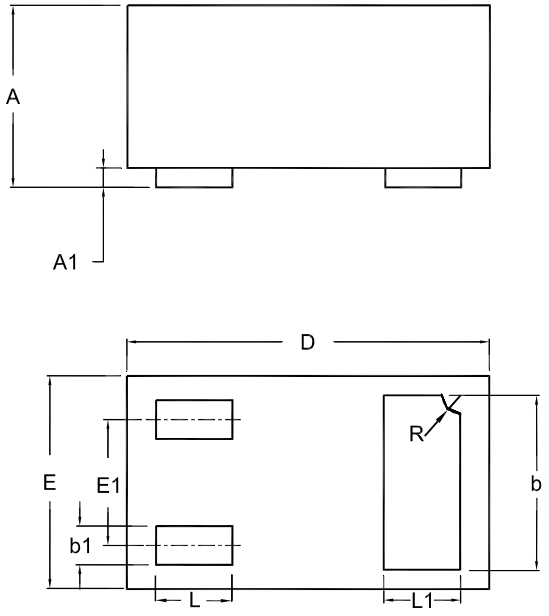
Typical Collector-Emitter Saturation Voltage
vs. Collector Current



Typical Base-Emitter
Saturation Voltage vs. Collector Current

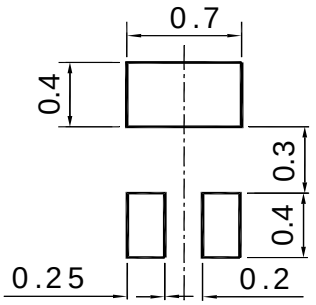
PACKAGE OUTLINE

Plastic surface mounted package **DFN1006-3B**



UNIT	A	A1	b	b1	D	E	E1	L	L1	R
mm	0.40 0.36	0.05 0	0.55 0.45	0.2 0.1	1.05 0.95	0.65 0.55	0.325	0.3 0.2	0.3 0.2	0.15 0.05

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
DFN1006-3B	8	4 ± 0.1	0.157 ± 0.004	178	7	5,000