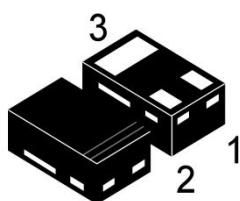


MMBT3906NC

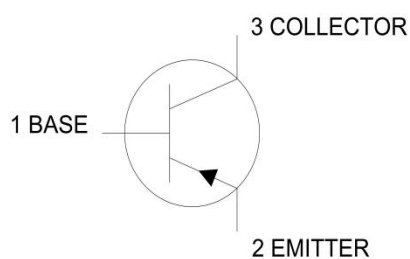
Feature

- Switching Transistor
- Collector-emitter voltage $V_{CE} = -40V$
- Collector current $I_C = -0.2A$

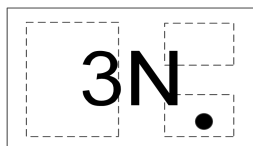
Package

**DFN1006-3L**

Circuit diagram



Marking



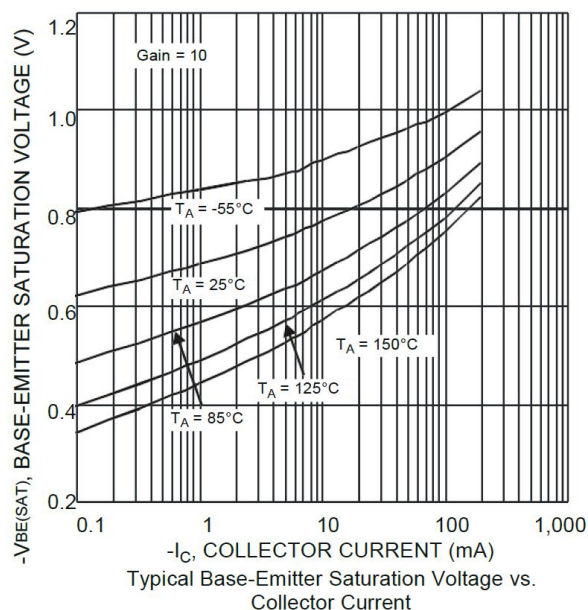
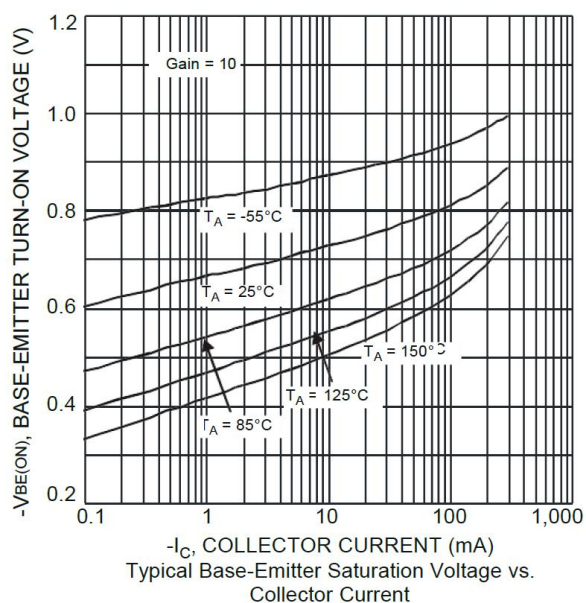
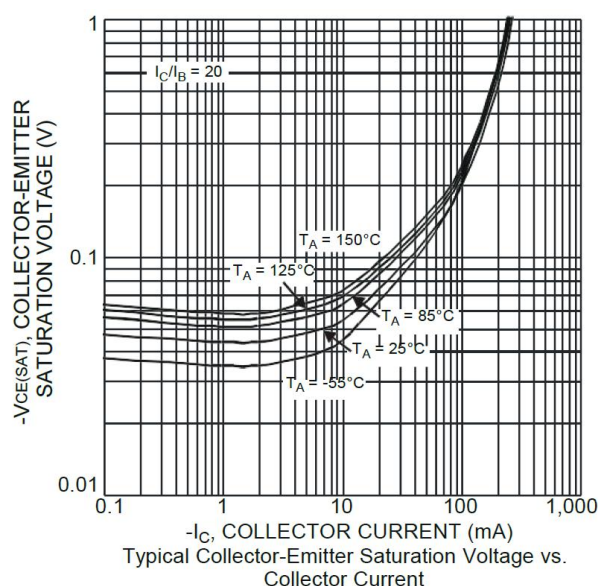
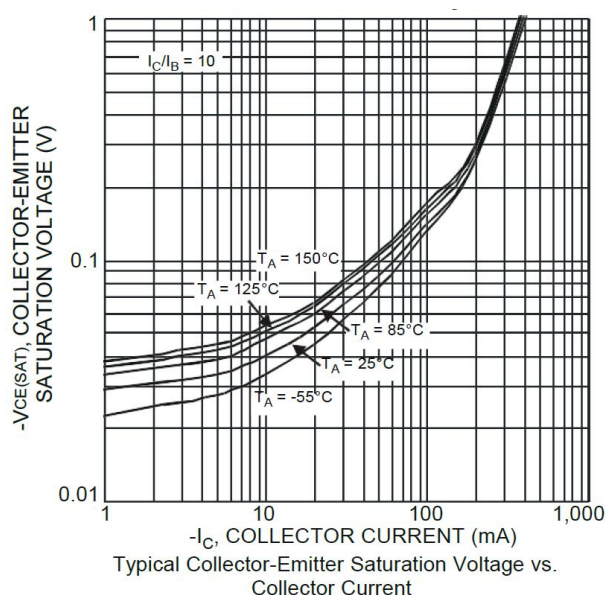
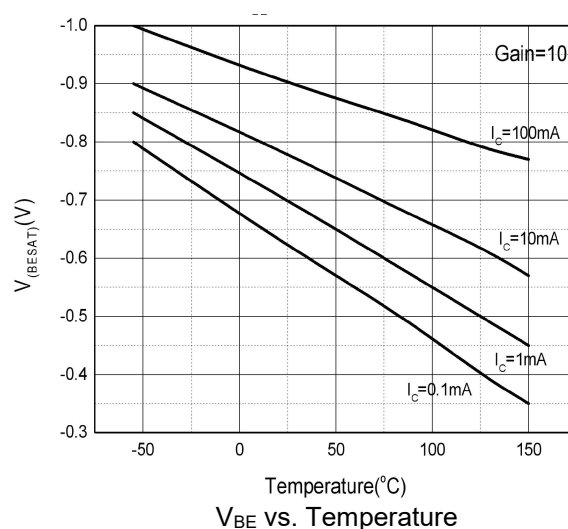
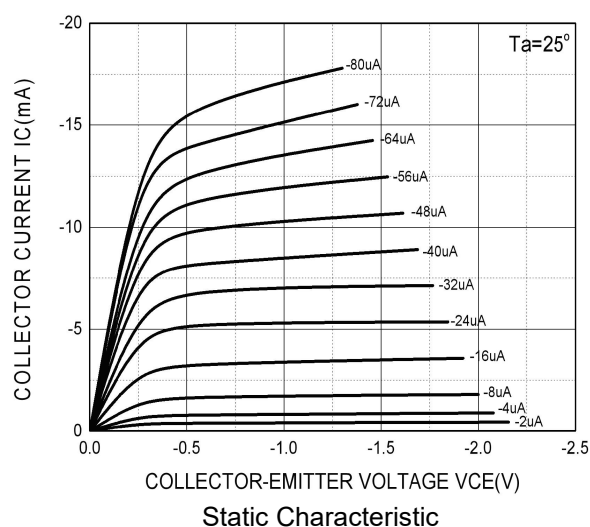
Absolute maximum ratings (Ta=25°C unless otherwise noted)

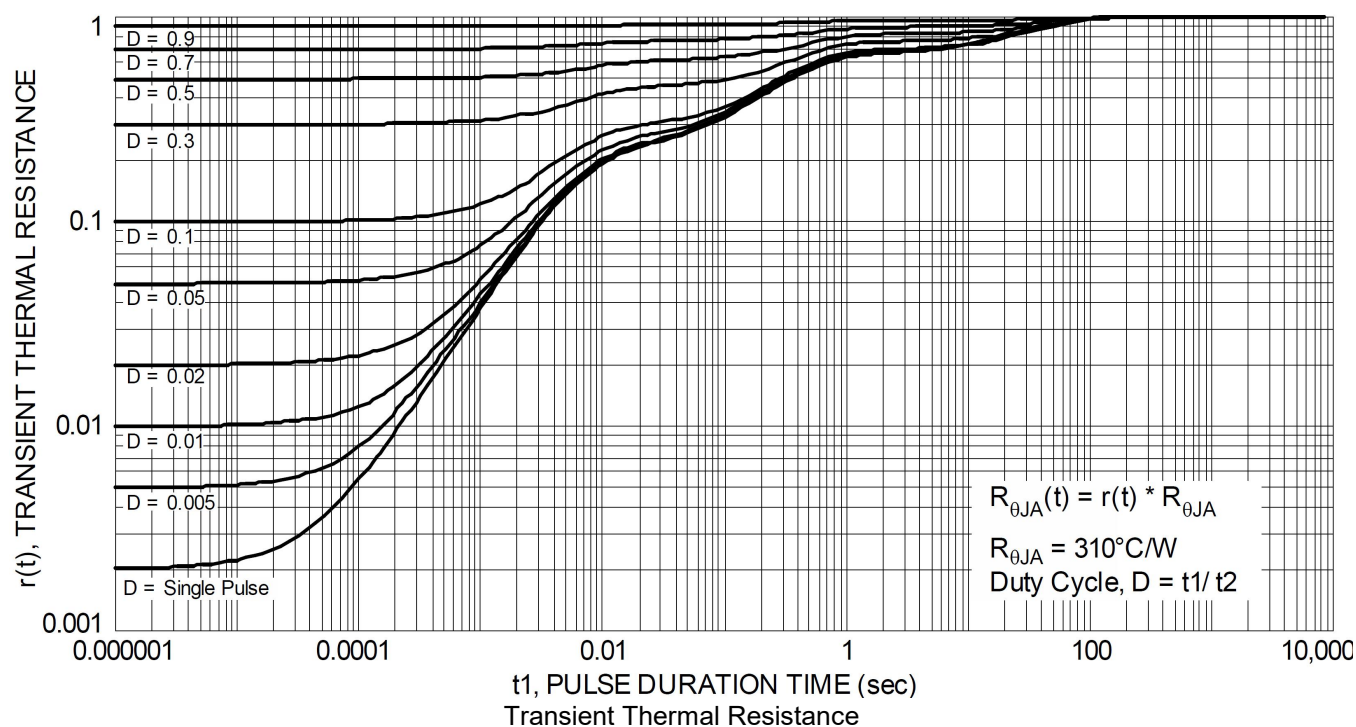
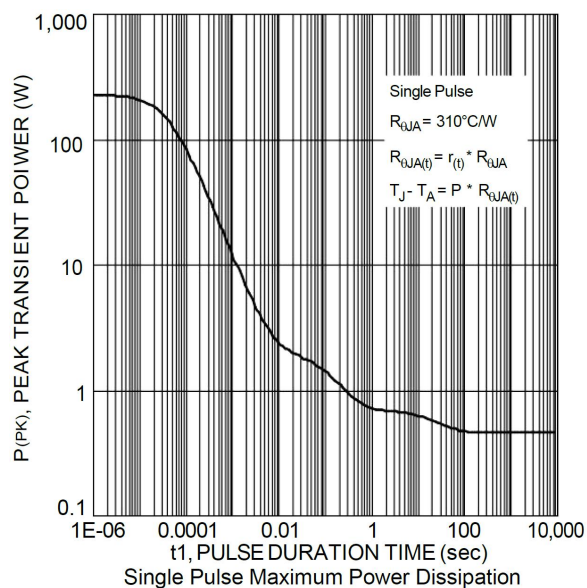
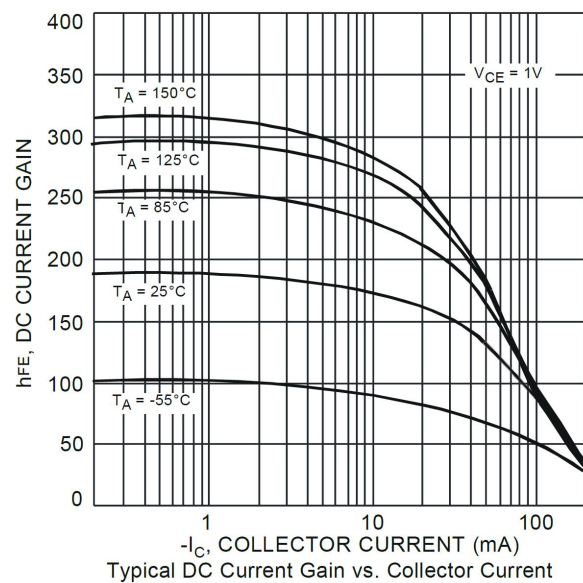
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	-40	V
Collector Emitter Voltage	V_{CEO}	-40	V
Emitter Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA
Power Dissipation	P_{tot}	100	mW
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	- 55 to + 150	°C

Electrical characteristics (T_A=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C=-100\mu A, I_E=0$	-40		V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C=-100\mu A, I_B=0$	-40		V
Emitter-base breakdown voltage	BV_{EBO}	$I_E=-100\mu A, I_C=0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB}=-30V, I_E=0$		-100	nA
Collector cut-off current	I_{CEO}	$V_{CE}=-30V, I_B=0$		-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5V, I_C=0$		-100	nA
DC current gain	h_{FE1}	$V_{CE}=-1V, I_C=-0.1mA$	60		
	h_{FE2}	$V_{CE}=-1V, I_C=-1mA$	80		
	h_{FE3}	$V_{CE}=-1V, I_C=-10mA$	100	300	
	h_{FE4}	$V_{CE}=-1V, I_C=-50mA$	60		
	h_{FE5}	$V_{CE}=-1V, I_C=-100mA$	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-10mA, I_B=-1mA$		-0.25	V
	$V_{CE(sat)}$	$I_C=-50mA, I_B=-5mA$		-0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-10mA, I_B=-1mA$	-0.65	-0.85	V
	$V_{BE(sat)}$	$I_C=-50mA, I_B=-5mA$		-0.95	V
Transition frequency	f_T	$V_{CE}=-20V, I_C=-10mA, f=30MHz$	250		MHZ
Collector output capacitance	C_{ob}	$V_{CB}=-5V, I_E=0, f=1MHz$		4.5	pF
Base Input capacitance	C_{ib}	$V_{EB}=-0.5V, I_E=0, f=1MHz$		10	pF
Noise figure	N_F	$V_{CE}=-5V, I_E=-0.1mA, f=1kHz, R_G=1k\Omega$		4	dB
Delay time	t_d	$V_{CC}=-3V, V_{BE(OFF)}=0.5V, I_C=-10mA, I_{B1}=-1mA$		35	ns
Rise time	t_r			35	ns
Storage time	t_s	$V_{CC}=-3V, I_C=-10mA, I_{B1}=I_{B2}=-1mA$		225	ns
Fall time	t_f			75	ns

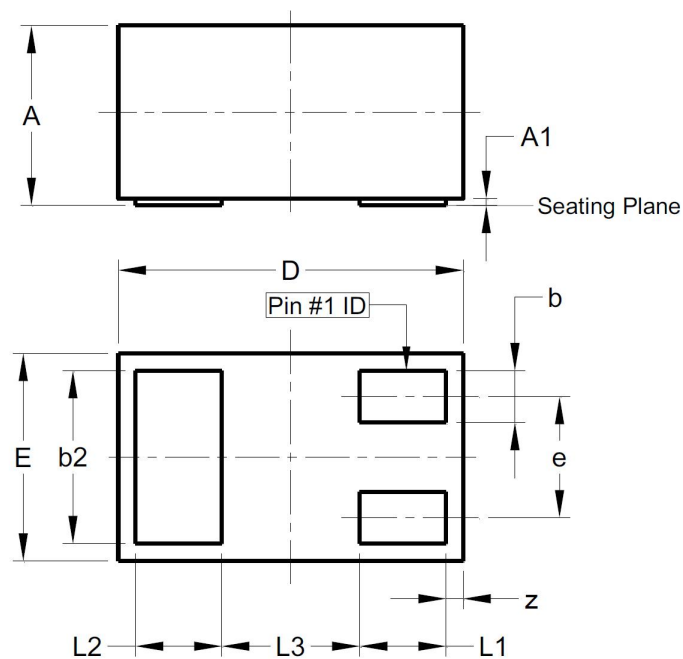
Typical Characteristics





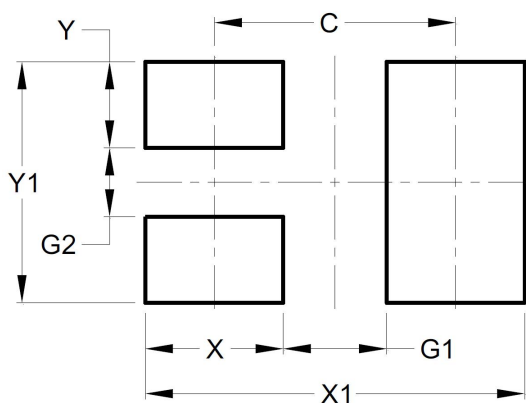


DFN1006-3L Package Information



Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.47	0.50	0.55
A1	0.00	-	0.05
b	0.10	0.15	0.20
b2	0.45	0.50	0.55
D	0.95	1.0	1.05
E	0.55	0.60	0.65
e	0.35BSC		
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
L3	0.40		
z	0.02	0.05	0.08

Recommend land pattern (Unit: mm)



Dimensions	Value (in mm)
C	0.70
G1	0.30
G2	0.20
X	0.40
X1	1.10
Y	0.25
Y1	0.70