

MMBT3906FN3

PNP GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 40 Volts **POWER** 250 mWatts

DFN 3L Unit : inch(mm)

FEATURES

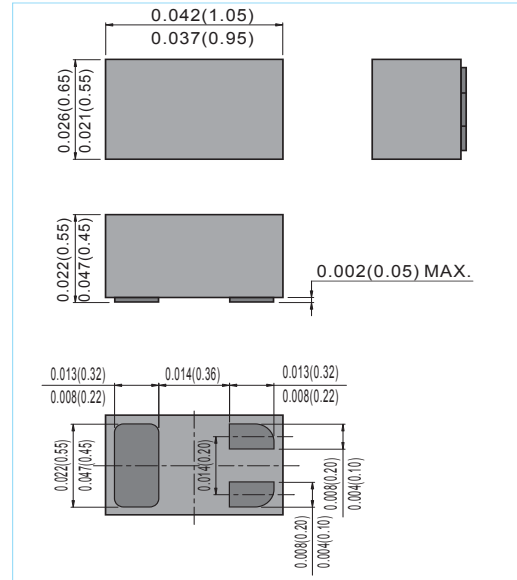
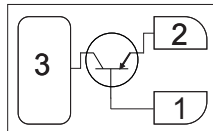
- PNP epitaxial silicon, planar design
- Collector-emitter voltage $V_{CE} = -40V$
- Collector current $I_C = -200mA$
- In compliance with EU RoHS 2002/95/EC directives

MECHANICAL DATA

Case: DFN 3L, Plastic

Terminals: Solderable per MIL-STD-750, Method 2026

Marking: AD



ABSOLUTE RATINGS

Parameter	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	-40	V
Collector - Base Voltage	V_{CBO}	-40	V
Emitter - Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-200	mA

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	250	mW
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	500	$^{\circ}C/W$
Junction Temperature	T_J	-55 to +150	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Note 1: Transistor mounted on FR-4 board 70 x 60 x 1mm.

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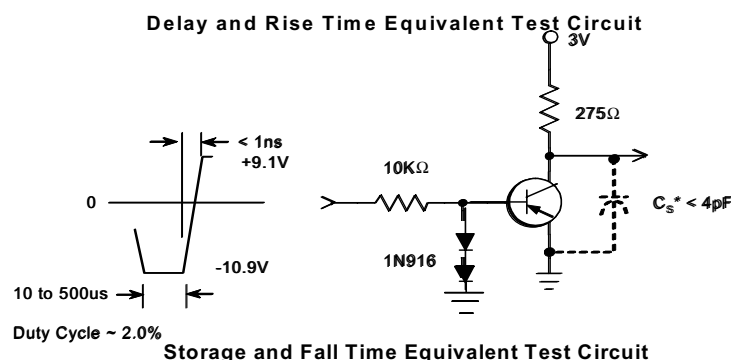
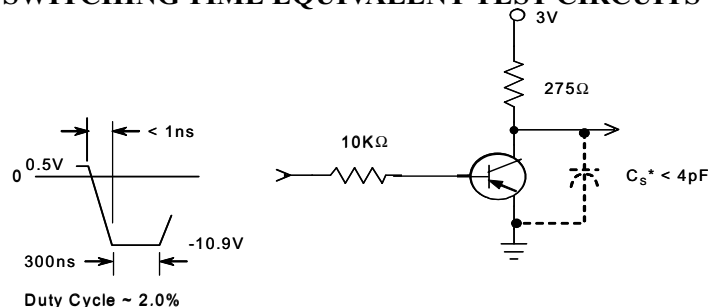
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ELECTRICAL CHARACTERISTICS $T_A=25^\circ\text{C}$

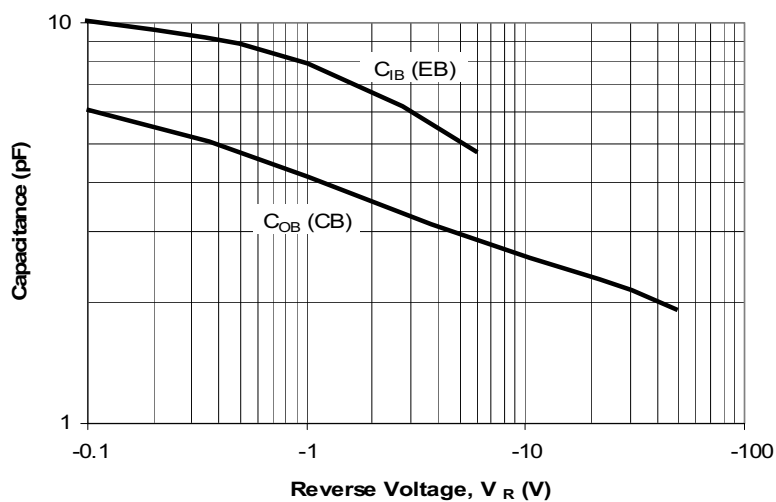
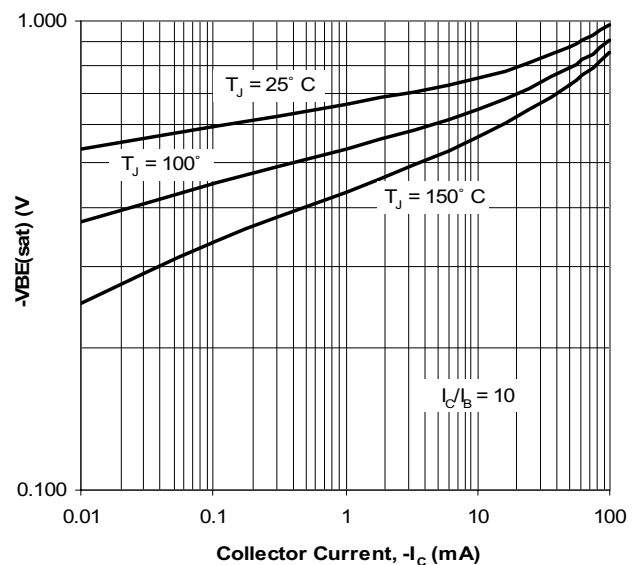
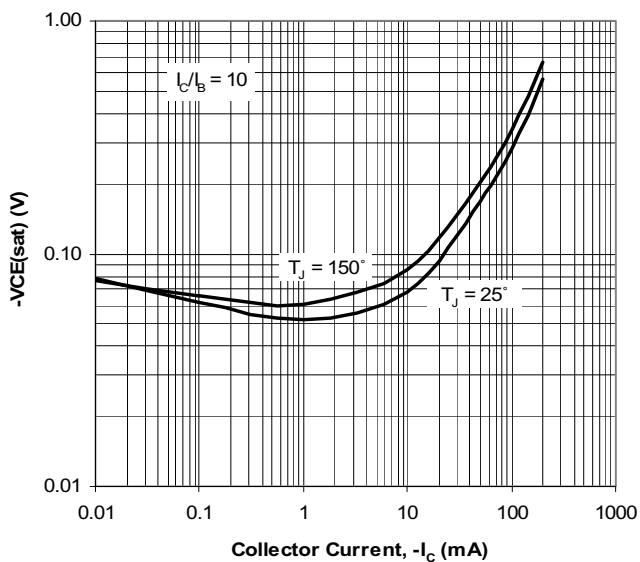
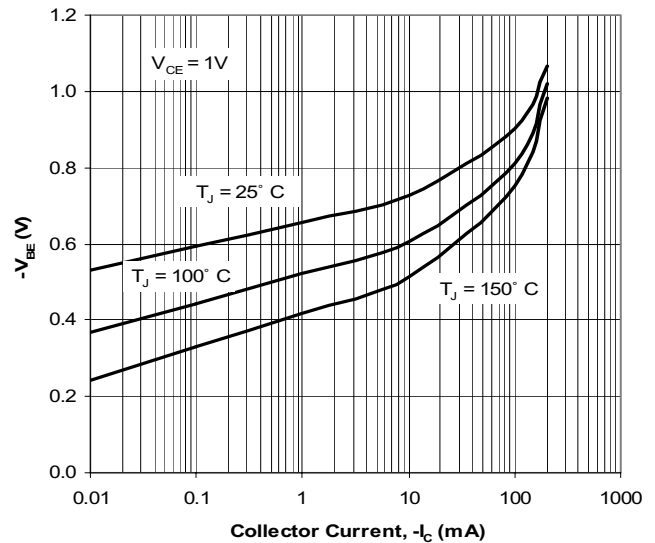
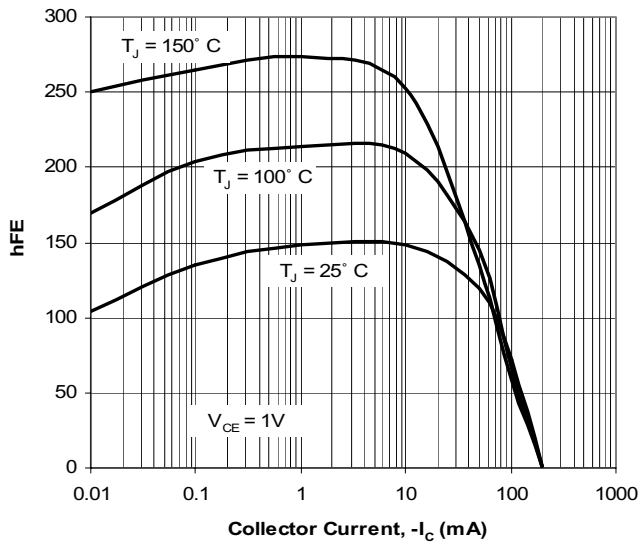
Parameter	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1.0\text{mA}$, $I_B=0$	-40	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}$, $I_E=0$	-40	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}$, $I_C=0$	-5.0	-	-	V
Base Cutoff Current	I_{BL}	$V_{CE}=-30\text{V}$, $V_{EB}=-3.0\text{V}$	-	-	-50	nA
Collector Cutoff Current	I_{CEX}	$V_{CE}=-30\text{V}$, $V_{EB}=-3.0\text{V}$	-	-	-50	nA
DC Current Gain (Note 2)	h_{FE}	$I_C=-0.1\text{mA}$, $V_{CE}=-1.0\text{V}$	60	-	-	-
		$I_C=-1.0\text{mA}$, $V_{CE}=-1.0\text{V}$	80	-	-	
		$I_C=-10\text{mA}$, $V_{CE}=-1.0\text{V}$	100	-	300	
		$I_C=-50\text{mA}$, $V_{CE}=-1.0\text{V}$	60	-	-	
		$I_C=-100\text{mA}$, $V_{CE}=-1.0\text{V}$	30	-	-	
Collector - Emitter Saturation Voltage (Note 2)	$V_{CE(SAT)}$	$I_C=-10\text{mA}$, $I_B=-1.0\text{mA}$ $I_C=-50\text{mA}$, $I_B=-5.0\text{mA}$	-	-	-0.25 -0.4	V
Base - Emitter Saturation Voltage (Note 2)	$V_{BE(SAT)}$	$I_C=-10\text{mA}$, $I_B=-1.0\text{mA}$ $I_C=-50\text{mA}$, $I_B=-5.0\text{mA}$	-0.65 -	-	-0.85 -0.95	V
Collector - Base Capacitance	C_{CBO}	$V_{CB}=-5\text{V}$, $I_E=0$, $f=1\text{MHz}$	-	-	4.5	pF
Emitter - Base Capacitance	C_{EBO}	$V_{EB}=-0.5\text{V}$, $I_C=0$, $f=1\text{MHz}$	-	-	10	pF
Delay Time	t_d	$V_{CC}=-3\text{V}$, $V_{BE}=-0.5\text{V}$, $I_C=-10\text{mA}$, $I_B=-1.0\text{mA}$	-	-	35	ns
Rise Time	t_r	$V_{CC}=-3\text{V}$, $V_{BE}=-0.5\text{V}$, $I_C=-10\text{mA}$, $I_B=-1.0\text{mA}$	-	-	35	ns
Storage Time	t_s	$V_{CC}=-3\text{V}$, $I_C=-10\text{mA}$ $I_B1=I_B2=-1.0\text{mA}$	-	-	225	ns
Fall Time	t_f	$V_{CC}=-3\text{V}$, $I_C=-10\text{mA}$ $I_B1=I_B2=-1.0\text{mA}$	-	-	75	ns

Note 2: Pulse Test: Pulse Width < 300 us, Duty Cycle < 2.0%.

SWITCHING TIME EQUIVALENT TEST CIRCUITS



ELECTRICAL CHARACTERISTICS CURVE

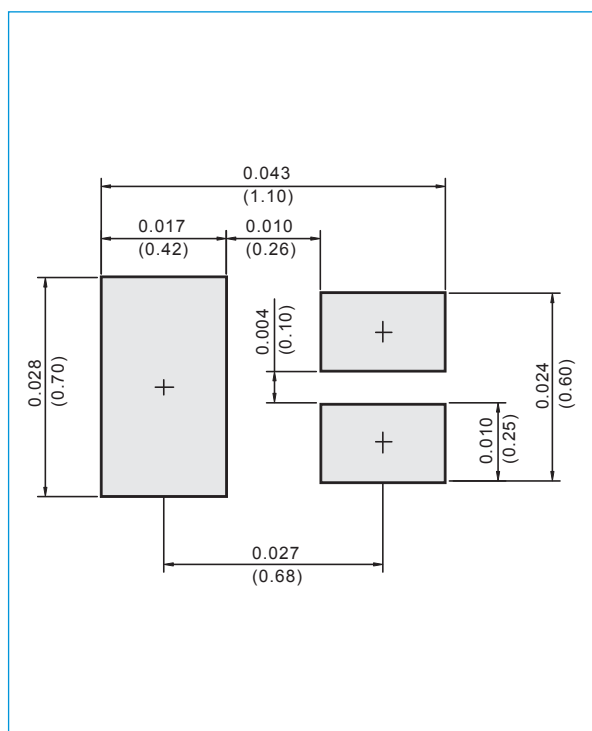


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MOUNTING PAD LAYOUT

DFN 3L

Unit: inch (mm)



ORDER INFORMATION

- Packing information
T/R - 8K per 7" plastic Reel

LEGAL STATEMENT

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