



MMBT3906FA

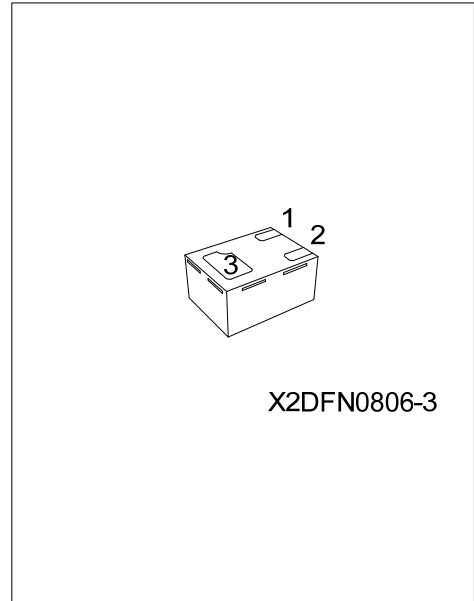
Preliminary

PNP SILICON TRANSISTOR

**GENERAL PURPOSE
APPLICATION**

■ **FEATURES**

- * Collector-Emitter Voltage: $V_{CE0}=-40V$
- * Complementary to UTC MMBT3904FA



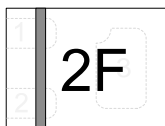
■ **ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
MMBT3906FAL-KBB-R	MMBT3906FAG-KBB-R	X2DFN0806-3	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>MMBT3906FAG-KBB-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) KBB: X2DFN0806-3 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ **MARKING**



■ ABSOLUTE MAXIMUM RATING ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	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
Peak Pulse Collector Current	I_{CM}	-500	mA
Collector Dissipation	P_C	435	W
Junction Temperature	T_J	+150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	287	$^{\circ}\text{C/W}$

Note: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	V_{CBO}	$I_C=-10\mu\text{A}, I_E=0$	-40			V
Collector-Emitter Breakdown Voltage (Note)	V_{CEO}	$I_C=-1\text{mA}, I_B=0$	-40			V
Emitter-Base Breakdown Voltage	V_{EBO}	$I_E=-10\mu\text{A}, I_C=0$	-5			V
Collector Cut-off Current	I_{CEX}	$V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$			-50	nA
Base Cut-off Current	I_{BL}	$V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$			-50	nA
DC Current Gain (Note)	h_{FE}	$V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$	60			
		$V_{CE}=-1\text{V}, I_C=-1\text{mA}$	80			
		$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100		300	
		$V_{CE}=-1\text{V}, I_C=-50\text{mA}$	60			
		$V_{CE}=-1\text{V}, I_C=-100\text{mA}$	30			
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$			-0.25	V
		$I_C=-50\text{mA}, I_B=-5\text{mA}$			-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-0.65		-0.85	V
		$I_C=-50\text{mA}, I_B=-5\text{mA}$			-0.95	V
Transition Voltage	f_T	$V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	300			MHz

Note: Pulse test: $P_W \cong 300\mu\text{s}$, Duty Cycle $\cong 2\%$.

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