



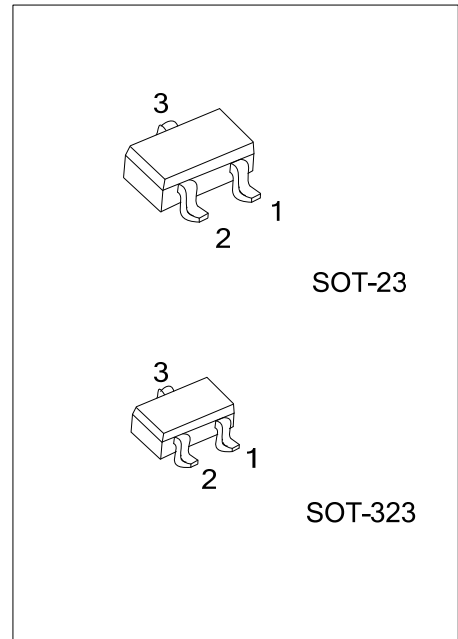
## MMBT3906

## PNP SILICON TRANSISTOR

### GENERAL PURPOSE APPLICATION

#### FEATURES

- \* Collector-Emitter Voltage:  $V_{CE0}=40V$
- \* Collector Dissipation:  $P_{D(MAX)}=350mW$
- \* Complementary to UTC MMBT3904



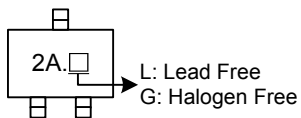
Lead-free: MMBT3906L  
Halogen-free: MMBT3906G

#### ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
MMBT3906-AE3-R	MMBT3906L-AE3-R	MMBT3906G-AE3-R	SOT-23	E	B	C	Tape Reel
MMBT3906-AL3-R	MMBT3906L-AL3-R	MMBT3906G-AL3-R	SOT-323	E	B	C	Tape Reel

<p>MMBT3906L-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Lead Plating</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23, AL3: SOT-323 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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#### MARKING



■ ABSOLUTE MAXIMUM RATING (Ta=25°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
Base Current	$I_B$	-50	mA
Collector Dissipation	$P_C$	350	mW
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55 ~ +150	°C

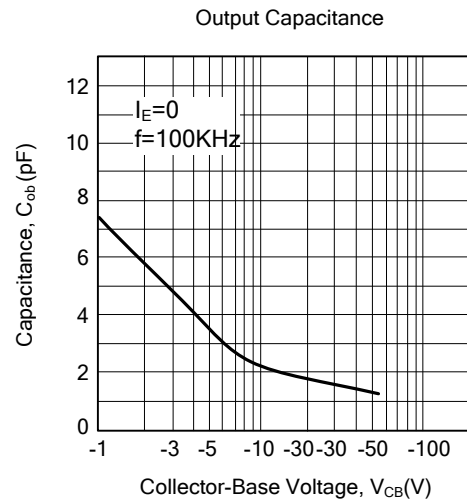
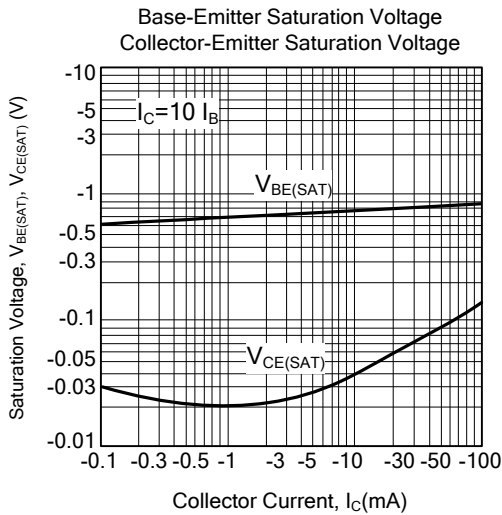
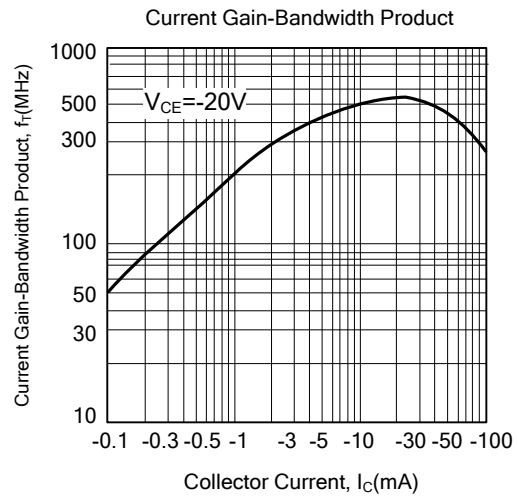
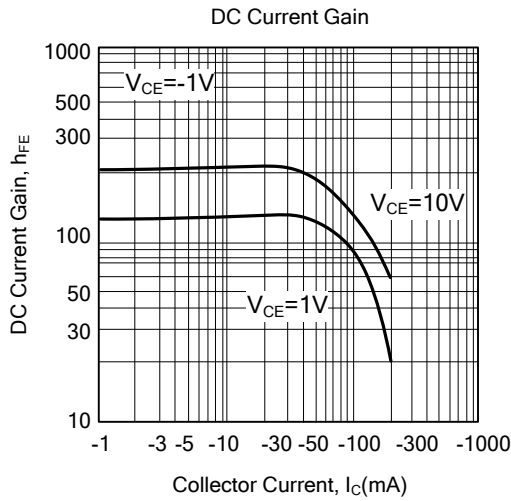
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	$I_{CEX}$	$V_{CE}=-30V, V_{EB}=-3V$			-50	nA
Base Cut-off Current	$I_{BL}$	$V_{CE}=-30V, V_{EB}=-3V$			-50	nA
Collector-Base Breakdown Voltage	$V_{CBO}$	$I_C=-10\mu A, I_E=0$	-40			V
Collector-Emitter Breakdown Voltage (Note)	$V_{CEO}$	$I_C=-1mA, I_B=0$	-40			V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E=-10\mu A, I_C=0$	-6			V
DC Current Gain (Note)	$h_{FE1}$	$V_{CE}=-1V, I_C=-0.1mA$	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 (Note)	$V_{CE(SAT)1}$	$I_C=-10mA, I_B=-1mA$			-0.25	V
	$V_{CE(SAT)2}$	$I_C=-50mA, I_B=-5mA$			-0.4	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)1}$	$I_C=-10mA, I_B=-1mA$	-0.65		-0.85	V
	$V_{BE(SAT)2}$	$I_C=-50mA, I_B=-5mA$			-0.95	V
Transition Voltage	$f_T$	$V_{CE}=-20V, I_C=-10mA, f=100MHz$	250			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=-5V, I_E=0, f=1MHz$			4.5	pF
Turn on Time	$t_{ON}$	$V_{CC}=-3V, V_{BE}=-0.5V, I_C=-10mA, I_{B1}=-1mA$			70	ns
Turn off Time	$t_{OFF}$	$I_{B1}=I_{B2}=-1mA$			300	ns

Note: Pulse test:  $PW \leq 300\mu s$ , Duty Cycle  $\leq 2\%$

## TYPICAL CHARACTERISTICS



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