February 2008

Marking: AB

SOT-923F



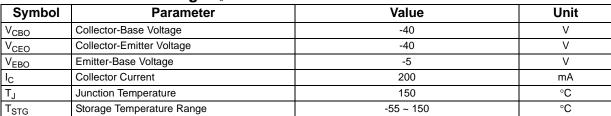
MMBT3906SL

PNP Epitaxial Silicon Transistor

Features

- · General purpose amplifier transistor.
- Ultra small surface mount package for all types(max 0.43mm tall)
- · Suitable for general switching & amplification
- · Well suited for portable application
- As complementary type, NPN MMBT3904SL is recommended.

Absolute Maximum Ratings T_a = 25°C unless otherwise noted



Thermal Characteristics* Ta=25°C unless otherwise noted

Symbol	Parameter	Мах	Unit
P _C	Collector Power Dissipation, by R _{θJA}	227	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	550	°C/W

^{*} Minimum land pad.

Electrical Characteristics* T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Unit
BV _{CBO}	Collector-Base Breakdown Voltage	$I_C = -10\mu A, I_E = 0$	-40		V
BV _{CEO}	Collector-Emitter Breakdown Voltage	$I_C = -1 \text{mA}, I_B = 0$	40		V
BV _{EBO}	Emitter-Base Breakdown Voltage	$I_E = -10\mu A, I_C = 0$	-5		V
I _{CEX}	Collector Cut-off Current	$V_{CE} = -30V, V_{EB(OFF)} = -0.3V$		-50	nA
h _{FE}	DC Current Gain	$V_{CE} = 1V$, $I_{C} = -0.1$ mA $V_{CE} = 1V$, $I_{C} = -1$ mA $V_{CE} = 1V$, $I_{C} = -10$ mA $V_{CE} = 1V$, $I_{C} = -50$ mA $V_{CE} = 1V$, $I_{C} = -100$ mA	60 80 100 60 30	300	
V _{CE} (sat)	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$		-0.25 -0.4	V V
V _{BE} (sat)	Base-Emitter Saturation Voltage	$I_C = -10\text{mA}, I_B = -1\text{mA}$ $I_C = -50\text{mA}, I_B = -5\text{mA}$	-0.65	-0.85 -0.95	V V
f _T	Current Gain Bandwidth Product	V _{CE} = -20V, I _C = -10mA, f = 100MHz	250		MHz
C _{ob}	Output Capacitance	$V_{CB} = -5V, I_{E} = 0, f = 1MHz$		7.0	pF
C _{ib}	Input Capacitance	$V_{EB} = -0.5V, I_{C} = 0, f = 1MHz$		15	pF
t _d	Delay Time	$V_{CC} = -3V, I_{C} = -10mA$		35	ns
t _r	Rise Time	I _{B1} =- I _{B2} = -1mA		35	ns
t _s	Storage Time	7		225	ns
t _f	Fall Time			75	ns

^{*} DC Item are tested by Pulse Test : Pulse Width≤300us, Duty Cycle≤2%

These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.
These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Typical Performance Characteristics

Figure 1. DC Current Gain

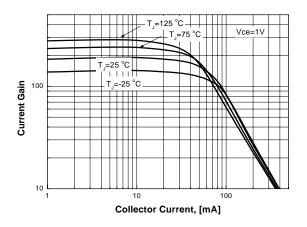


Figure 2. Collector-Emitter Saturation Voltage

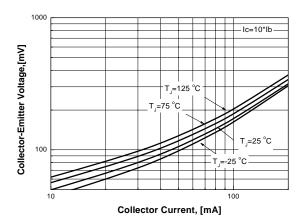


Figure 3. Base- Emitter Saturation Voltage

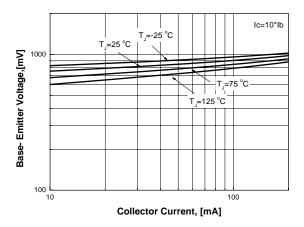


Figure 4. Collector- Base Leakage Current

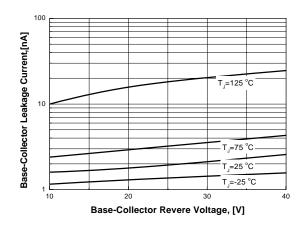


Figure 5. Collector- Base Capacitance

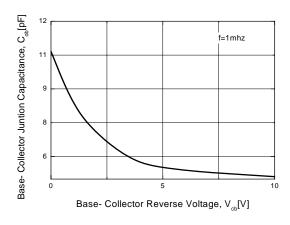
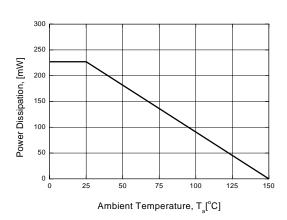


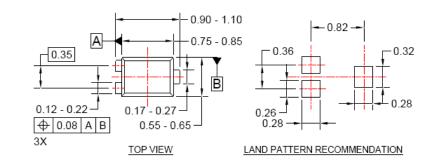
Figure 6. Power Derating

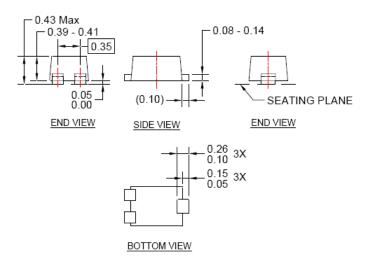


Package Dimensions

SOT-923F

- Case : SOT-923F
- Case Material(Molded Plastic): KTMC1060SC
- UL Flammability classification rating: "V0"
- Moisture Sensitivity level per JESD22-A1113B : MSL 1
- Lead terminals solderable per MIL-STD7502026 /JESD22A121
- Lead Free Plating : Pure Tin(Matte)





Dimensions in Millimeters





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