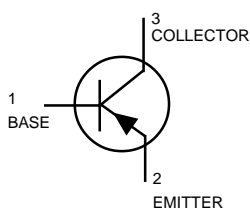
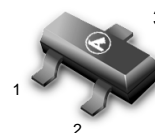


Preliminary Information

General Purpose Transistor

PNP Silicon

These transistors are designed for general purpose amplifier applications. They are housed in the SOT-323/SC-70 package which is designed for low power surface mount applications.


MMBT2907AWT1


CASE 419-02, STYLE 3
SOT-323 / SC-70

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	-60	Vdc
Collector-Base Voltage	V_{CBO}	-60	Vdc
Emitter-Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current — Continuous	I_C	-600	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$	P_D	150	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

DEVICE MARKING

MMBT2907AWT1 = 2F

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage(2) ($I_C = -10\text{ mAdc}, I_B = 0$)	$V_{(BR)CEO}$	-60	—	Vdc
Collector-Emitter Breakdown Voltage ($I_C = -10\text{ mAdc}, I_E = 0$)	$V_{(BR)CBO}$	-60	—	Vdc
Emitter-Base Breakdown Voltage ($I_E = -10\mu\text{Adc}, I_C = 0$)	$V_{(BR)EBO}$	-5.0	—	Vdc
Base Cutoff Current ($V_{CE} = -30\text{Vdc}, V_{EB(OFF)} = -0.5\text{Vdc}$)	I_{BL}	—	-50	nAdc
Collector Cutoff Current ($V_{CE} = -30\text{Vdc}, V_{EB(OFF)} = -0.5\text{Vdc}$)	I_{CEX}	—	-50	nAdc

1. FR-5 = 1.0 x 0.75 x 0.062 in.

2. Pulse Test: Pulse Width $\leq 300\ \mu\text{s}$, Duty Cycle $\leq 2.0\%$.

MMBT2907AWT1
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
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ON CHARACTERISTICS

DC Current Gain(1) (I _C = -0.1 mA _{dc} , V _{CE} = -10 V _{dc}) (I _C = -1.0 mA _{dc} , V _{CE} = -10 V _{dc}) (I _C = -10 mA _{dc} , V _{CE} = -10 V _{dc}) (I _C = -150 mA _{dc} , V _{CE} = -10 V _{dc}) (I _C = -500 mA _{dc} , V _{CE} = -10 V _{dc})	h_{FE}	75 100 100 100 50	— — — — —	—
Collector-Emitter Saturation Voltage(1) (I _C = -150 mA _{dc} , I _B = -15 mA _{dc}) (I _C = -500 mA _{dc} , I _B = -50 mA _{dc})	$V_{CE(sat)}$	— —	-0.4 -1.6	V _{dc}
Base-Emitter Saturation Voltage(1) (I _C = -150 mA _{dc} , I _B = -15 mA _{dc}) (I _C = -500 mA _{dc} , I _B = -50 mA _{dc})	$V_{BE(sat)}$	— —	-1.3 -2.6	V _{dc}

SMALL-SIGNAL CHARACTERISTICS

Current-Gain — Bandwidth Product(4) (I _C = -50 mA _{dc} , V _{CE} = 20 V _{dc} , f = 100 MHz)	f_T	200	—	MHz
Output Capacitance (V _{CB} = -10 V _{dc} , I _E = 0, f = 1.0 MHz)	C_{obo}	—	8.0	pF
Input Capacitance (V _{EB} = -2.0 V _{dc} , I _C = 0, f = 1.0 MHz)	C_{ibo}	—	30	pF

SWITCHING CHARACTERISTICS

Turn-On Time (V _{CC} = -30 V _{dc} , I _C = -150 mA _{dc} , I _{B1} = -15 mA _{dc})	t_{on}	—	45	ns
Delay Time	t^d	—	10	ns
Rise Time	t_r	—	40	ns
Storage Time (V _{CC} = -6.0 V _{dc} , I _C = -150 mA _{dc} , I _{B1} = I _{B2} = 15 mA _{dc})	t_s	—	80	ns
Fall Time	t_f	—	30	ns
Turn-Off Time	t_{off}	—	100	ns

1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.