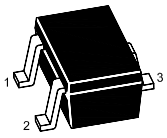
MMBT2907W / MMBT2907AW

PNP Silicon Epitaxial Planar Medium Power Transistor
for switching and amplifier applications



1.Base 2.Emitter 3.Collector
SOT-323 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value		Unit
		MMBT2907W	MMBT2907AW	
Collector Base Voltage	$-V_{CBO}$	60		V
Collector Emitter Voltage	$-V_{CEO}$	40	60	V
Emitter Base Voltage	$-V_{EBO}$	5		V
Collector Current	$-I_C$	600		mA
Total Power Dissipation	P_{tot}	200		mW
Junction Temperature	T_j	150		°C
Storage Temperature Range	T_S	-55 to +150		°C

Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at $-V_{CE}$ = 10 V, $-I_C$ = 0.1 mA	MMBT2907W	h_{FE}	35	-	-
	MMBT2907AW	h_{FE}	75	-	-
at $-V_{CE}$ = 10 V, $-I_C$ = 1 mA	MMBT2907W	h_{FE}	50	-	-
	MMBT2907AW	h_{FE}	100	-	-
at $-V_{CE}$ = 10 V, $-I_C$ = 10 mA	MMBT2907W	h_{FE}	75	-	-
	MMBT2907AW	h_{FE}	100	-	-
at $-V_{CE}$ = 10 V, $-I_C$ = 150 mA		h_{FE}	100	300	-
at $-V_{CE}$ = 10 V, $-I_C$ = 500 mA	MMBT2907W	h_{FE}	30	-	-
	MMBT2907AW	h_{FE}	50	-	-
Collector Base Voltage at $-I_C$ = 10 µA		$-V_{CBO}$	60	-	V
Collector Emitter Voltage at $-I_C$ = 10 mA	MMBT2907W	$-V_{CEO}$	40	-	V
	MMBT2907AW		60	-	
Emitter Base Voltage at $-I_E$ = 10 µA		$-V_{EBO}$	5	-	V
Collector Base Cutoff Current at $-V_{CB}$ = 50 V		$-I_{CBO}$	-	100	nA
Collector Emitter Cutoff Current at $-V_{CB}$ = 30 V		$-I_{CES}$	-	100	nA
Emitter Base Cutoff Current at $-V_{EB}$ = 3 V		$-I_{EBO}$	-	100	nA
Collector Emitter Saturation Voltage					
at $-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{CE(sat)}$	-	0.4	V
$-I_C$ = 500 mA, $-I_B$ = 50 mA			-	1.6	
Base Emitter Saturation Voltage					
at $-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{BE(sat)}$	-	1.3	V
$-I_C$ = 500 mA, $-I_B$ = 50 mA			-	2.6	
Transition Frequency at $-V_{CE}$ = 20 V, I_E = 50 mA, f = 100 MHz		f_T	200	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 100 KHz		C_{ob}	-	8	pF
Emitter Input Capacitance at $-V_{EB}$ = 2 V, f = 100 KHz		C_{ib}	-	30	pF
Turn-on Time at $-V_{CC}$ = 30 V, $-V_{BE(OFF)}$ = 1.5 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA		ton	-	50	ns
Delay Time at $-V_{CC}$ = 30 V, $-V_{BE(OFF)}$ = 1.5 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA		td	-	10	ns
Rise Time at $-V_{CC}$ = 30 V, $-V_{BE(OFF)}$ = 1.5 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA		tr	-	40	ns
Turn-off Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, I_{B1} = I_{B2} = -15 mA		toff	-	100	ns
Storage Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, I_{B1} = I_{B2} = -15 mA		tstg	-	80	ns
Fall Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, I_{B1} = I_{B2} = -15 mA		tf	-	30	ns

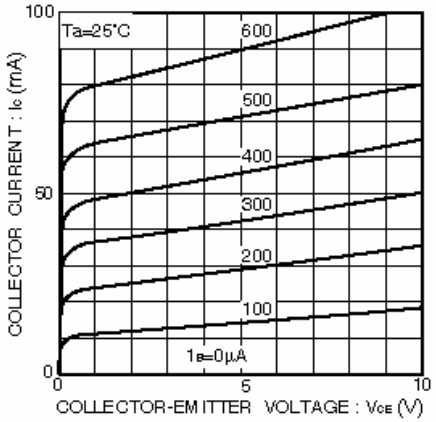


Fig.1 Grounded emitter output characteristics

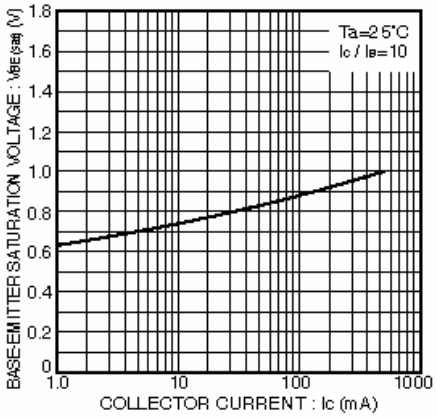


Fig.2 Base-emitter saturation voltage vs. collector current

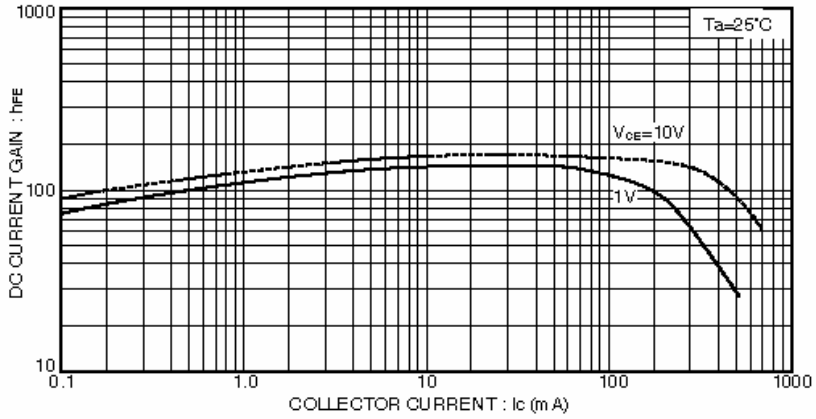


Fig.3 DC current gain vs. collector current (I)

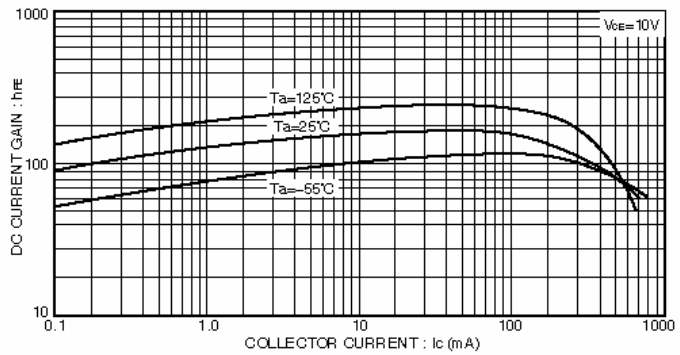


Fig.4 DC current gain vs. collector current (II)

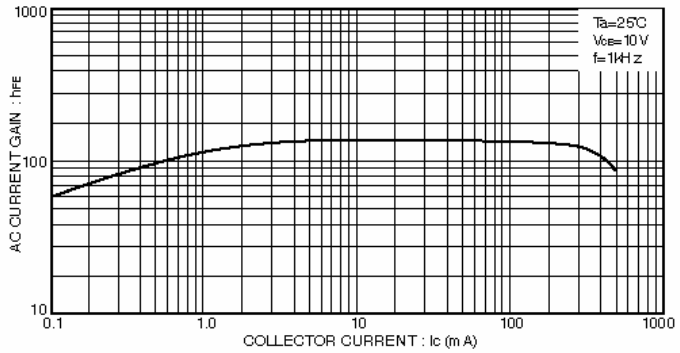


Fig.5 AC current gain vs. collector current

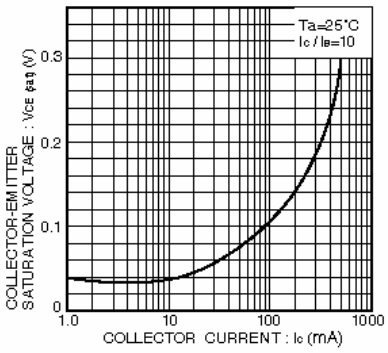


Fig.6 Collector-emitter saturation voltage vs. collector current

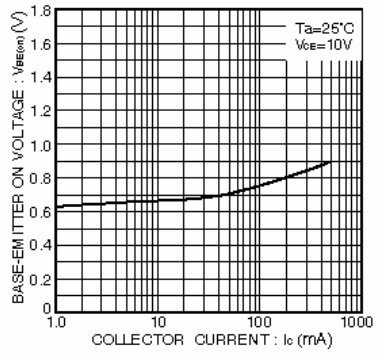


Fig.7 Grounded emitter propagation characteristics

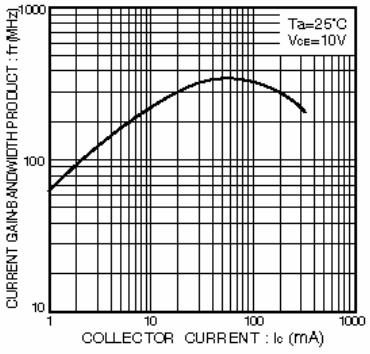


Fig.8 Gain bandwidth product vs. collector current

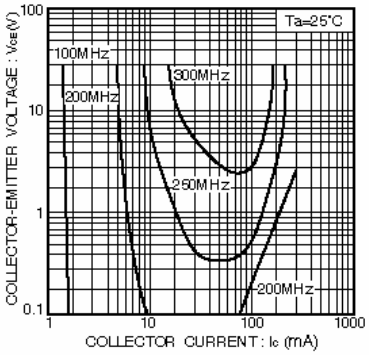


Fig.9 Gain bandwidth product

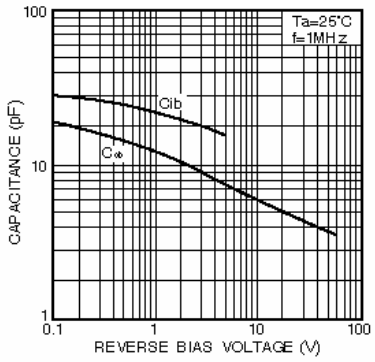


Fig.10 Input/output capacitance vs. voltage

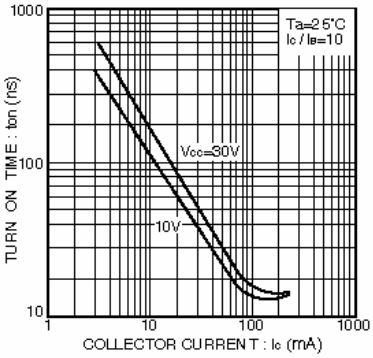


Fig.11 Turn-on time vs.collector current

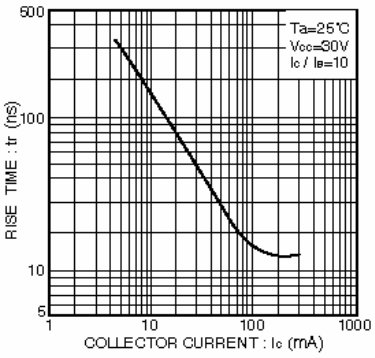


Fig.12 Rise time vs. collector current

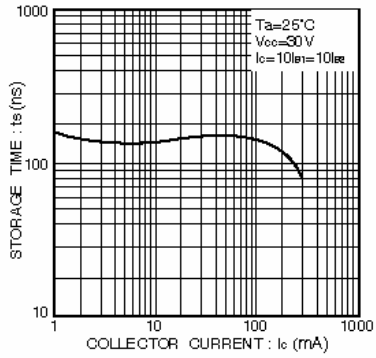


Fig.13 Storage time vs. collector current

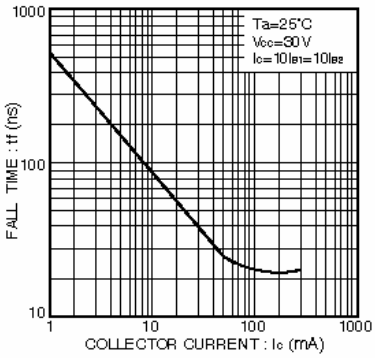


Fig.14 Fall time vs. collector current