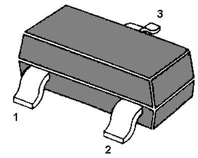
MMBT2907 / MMBT2907A

PNP Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into one group according to its DC current gain.



1. Base 2. Emitter 3. Collector

SOT-23 Plastic Package

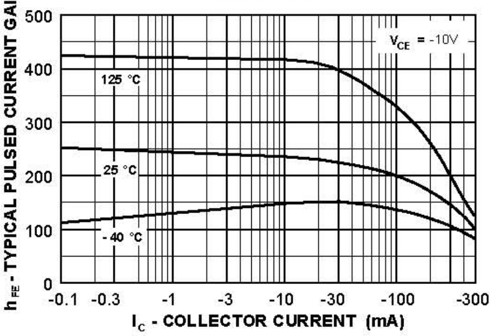
Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Collector Base Voltage		$-V_{CBO}$	60	V
Collector Emitter Voltage	MMBT2907 MMBT2907A	$-V_{CEO}$	40 60	V
Emitter Base Voltage		$-V_{EBO}$	5	V
Collector Current		$-I_C$	600	mA
Power Dissipation		P_{tot}	350	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	- 55 to + 150	°C

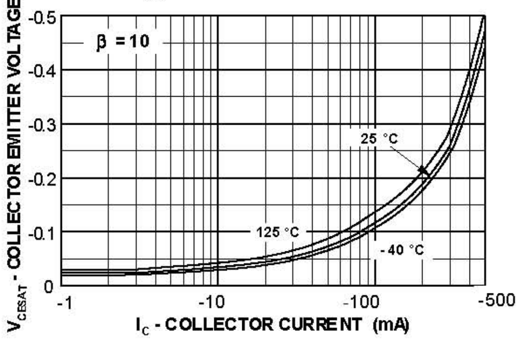
Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at $-I_C$ = 0.1 mA, $-V_{CE}$ = 10 V	MMBT2907	h_{FE}	35	-	-
	MMBT2907A	h_{FE}	75	-	-
at $-I_C$ = 1 mA, $-V_{CE}$ = 10 V	MMBT2907	h_{FE}	50	-	-
	MMBT2907A	h_{FE}	100	-	-
at $-I_C$ = 10 mA, $-V_{CE}$ = 10 V	MMBT2907	h_{FE}	75	-	-
	MMBT2907A	h_{FE}	100	-	-
at $-I_C$ = 150 mA, $-V_{CE}$ = 10 V		h_{FE}	100	300	-
at $-I_C$ = 500 mA, $-V_{CE}$ = 10 V	MMBT2907	h_{FE}	30	-	-
	MMBT2907A	h_{FE}	50	-	-
Collector Base Cutoff Current at $-V_{CB}$ = 50 V	MMBT2907	$-I_{CBO}$	-	20	nA
	MMBT2907A	$-I_{CBO}$	-	10	nA
Collector Base Breakdown Voltage at $-I_C$ = 10 µA		$-V_{(BR)CBO}$	60	-	V
Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA	MMBT2907	$-V_{(BR)CEO}$	40	-	V
	MMBT2907A	$-V_{(BR)CEO}$	60	-	V
Emitter Base Breakdown Voltage at $-I_E$ = 10 µA		$-V_{(BR)EBO}$	5	-	V
Collector Saturation Voltage at $-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{CE(sat)}$	-	0.4	V
at $-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{CE(sat)}$	-	1.6	V
Base Saturation Voltage at $-I_C$ = 150 mA, $-I_B$ = 15 mA		$-V_{BE(sat)}$	-	1.3	V
at $-I_C$ = 500 mA, $-I_B$ = 50 mA		$-V_{BE(sat)}$	-	2.6	V
Gain Bandwidth Product at $-I_C$ = 50 mA , $-V_{CE}$ = 20 V, f = 100 MHz		f_T	200	-	MHz
Collector Output Capacitance at $-V_{CB}$ = 10 V, f = 1 MHz		C_{ob}	-	8	pF
Turn-on Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA		t_{on}	-	45	ns
Delay Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA		t_d	-	10	ns
Rise Time at $-V_{CC}$ = 30 V, $-I_C$ = 150 mA, $-I_{B1}$ = 15 mA		t_r	-	40	ns
Turn-off Time at $-V_{CC}$ = 6 V, $-I_C$ = 150 mA, $-I_{B1}$ = $-I_{B2}$ = 15 mA		t_{off}	-	100	ns
Storage Time at $-V_{CC}$ = 6 V, $-I_C$ = 150 mA, $-I_{B1}$ = $-I_{B2}$ = 15 mA		t_s	-	80	ns
Fall Time at $-V_{CC}$ = 6 V, $-I_C$ = 150 mA, $-I_{B1}$ = $-I_{B2}$ = 15 mA		t_f	-	30	ns

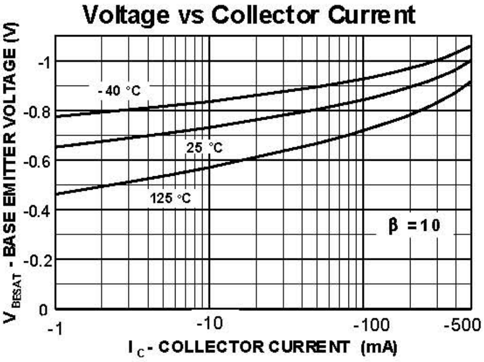
Typical Pulsed Current Gain vs Collector Current



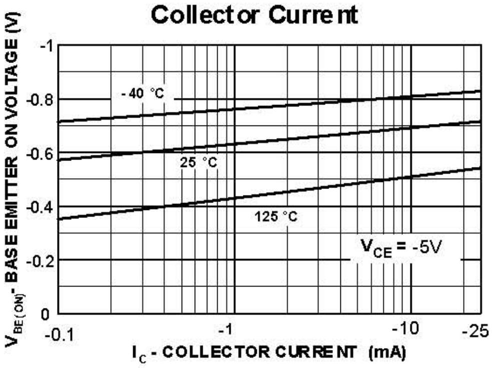
Collector-Emitter Saturation Voltage vs Collector Current



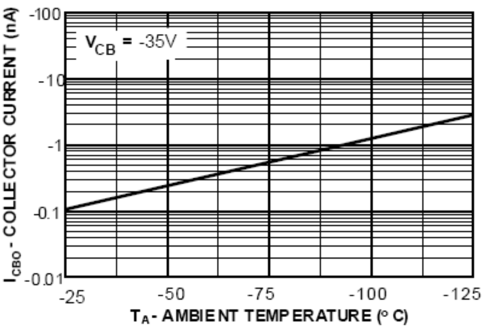
Base-Emitter Saturation Voltage vs Collector Current



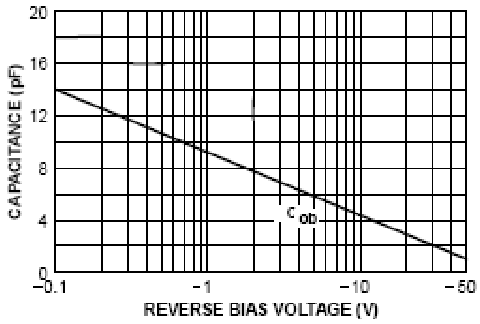
Base Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature



Input and Output Capacitance vs Reverse Bias Voltage



P_C-T_a