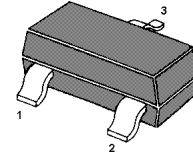


## MMBT2907 / MMBT2907A PNP Silicon Epitaxial Planar Transistor

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

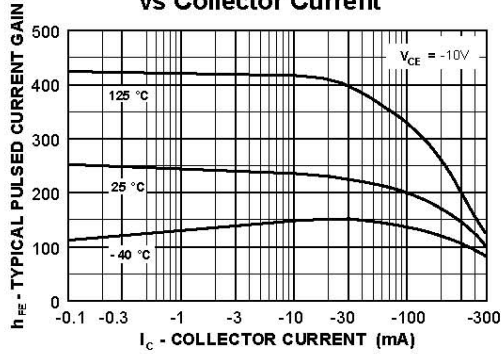
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
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
Power Dissipation	$P_{tot}$	350	mW
Junction Temperature	$T_j$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 55 to + 150	$^\circ\text{C}$

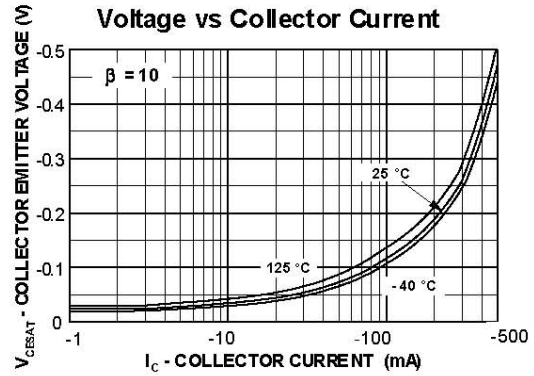
**Characteristics at  $T_a = 25^\circ\text{C}$** 

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

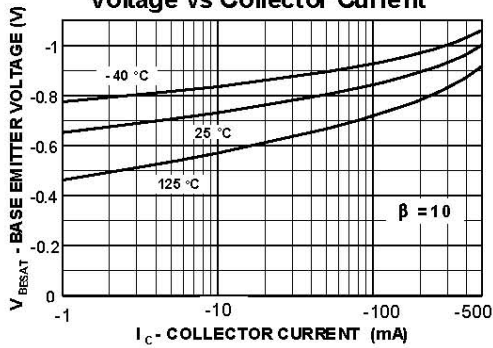
**Typical Pulsed Current Gain vs Collector Current**



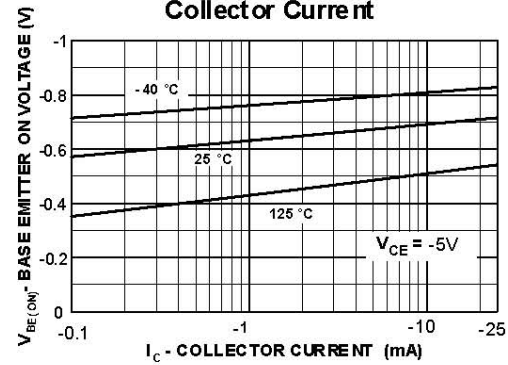
**Collector-Emitter Saturation Voltage vs Collector Current**



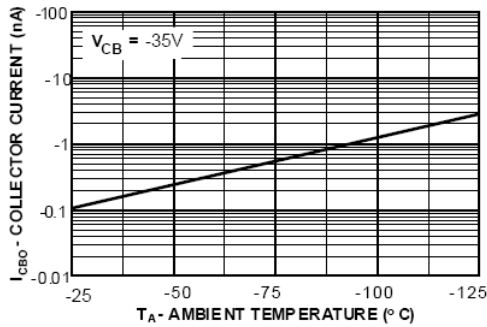
**Base-Emitter Saturation Voltage vs Collector Current**



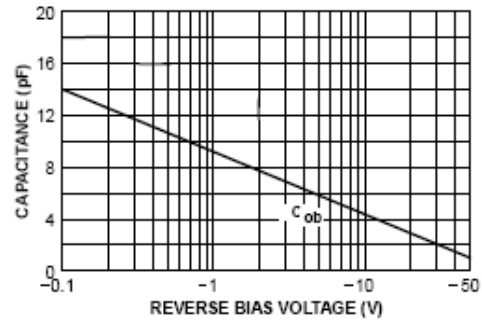
**Base Emitter ON Voltage vs Collector Current**



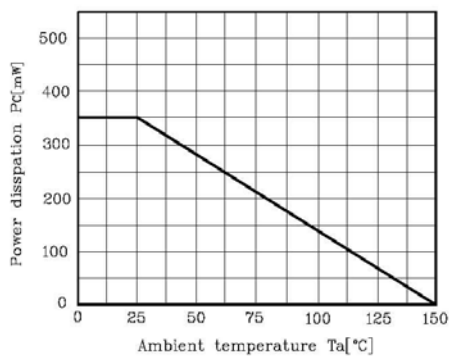
**Collector-Cutoff Current vs Ambient Temperature**



**Input and Output Capacitance vs Reverse Bias Voltage**



$P_C T_a$



## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23

