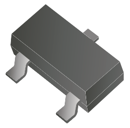
General Purpose Transistor

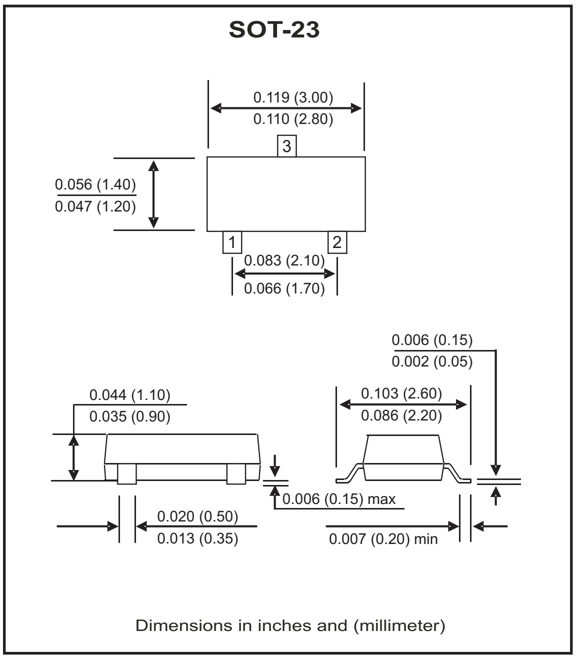
MMBT2907A-G (PNP)

RoHS Device

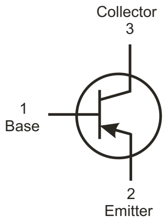


Features

- -Epitaxial planar die construction
- -Device is designed as a general purpose amplifier and switching.
- -Useful dynamic range exceeds to 600mA As a switch and to 100MHz as an amplifier.



Dimensions in inches and (millimeter)



Maximum Ratings (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base voltage	V_{CBO}			-60	V
Collector-Emitter voltage	V_{CEO}			-60	V
Emitter-Base voltage	V_{EBO}			-5	V
Collector current-Continuous	I_C			-0.6	A
Total device dissipatioin	P_D			0.35	W
Thermal resistance junction to ambient	$R_{\theta JA}$			357	°C/W
Storage temperature and junction temperature	T_{STG} , T_J	-55		+150	°C

Electrical Characteristics (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Max	Unit
Collector-Base breakdown voltage	I_C =10μA , I_E=0	V_{CBO}	-60		V
Collector-Emitter breakdown voltage	I_C =10mA , I_B=0	V_{CEO}*	-60		V
Emitter-Base breakdown voltage	I_E =10μA , I_C=0	V_{EBO}	-5		V
Collector cut-off current	V_{CB}=-50V , I_E=0	I_{CBO}		-20	nA
Base cut-off current	V_{CE}=-30V , V_{EB}=-0.5V	I_B		-50	nA
Collector cut-off current	V_{CE}=-30V , V_{BE}=-0.5V	I_{CEX}		-50	nA
DC current gain	V_{CE}=-10V , I_C=-0.1mA	$h_{FE(1)}$*	75		
	V_{CE}=-10V , I_C=-1mA	$h_{FE(2)}$*	100		
	V_{CE}=-10V , I_C=-10mA	$h_{FE(3)}$*	100		
	V_{CE}=-10V , I_C=-150mA	$h_{FE(4)}$*	100	300	
	V_{CE}=-10V , I_C=-500mA	$h_{FE(5)}$*	50		
Collector-Emitter saturation voltage	I_C=-150mA , I_B=-15mA	$V_{CE(SAT)}$*		-0.4	V
	I_C=-500mA , I_B=-50mA	$V_{CE(SAT)}$*		-1.6	V
Base-Emitter saturation voltage	I_C=-150mA , I_B=-15mA	$V_{BE(SAT)}$*		-1.3	V
	I_C=-500mA , I_B=-50mA	$V_{BE(SAT)}$*		-2.6	V
Transition frequency	V_{CE}=-20V , IC=-50mA F=100MHz	f_T	200		Mhz
Delay time	V_{CE}=-30V , I_C=-150mA I_{B1}=I_{B2}=-15mA	t_d		10	nS
Rise time		t_r		40	nS
Storage time	V_{CE}=-6V , I_C=-150mA I_{B1}=I_{B2}=-15mA	t_s		80	nS
Fall time		t_f		30	nS

* Pulse test: tp 300μS, δ 0.02

RATING AND CHARACTERISTIC CURVES (MMBT2907A-G)

Fig.1 Typical pulsed current gain V.S. Collector current

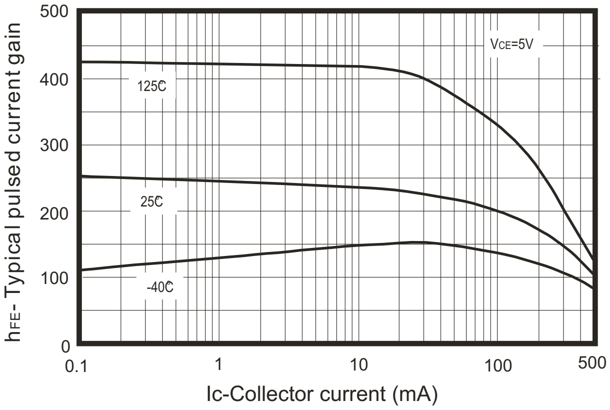


Fig.2 Collector-Emitter saturatioin voltage V.S. Collector current

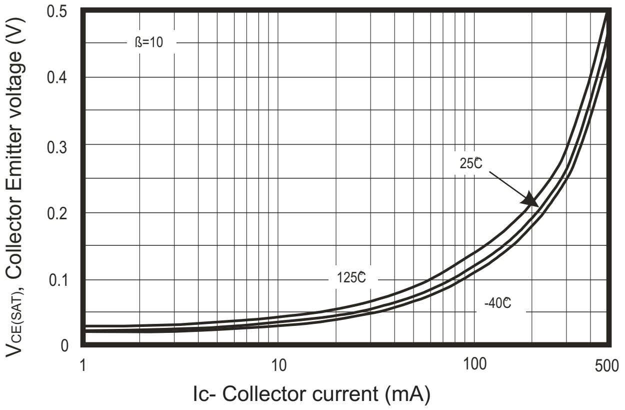


Fig.3 Base-Emitter saturation Voltage V.S. Collector current

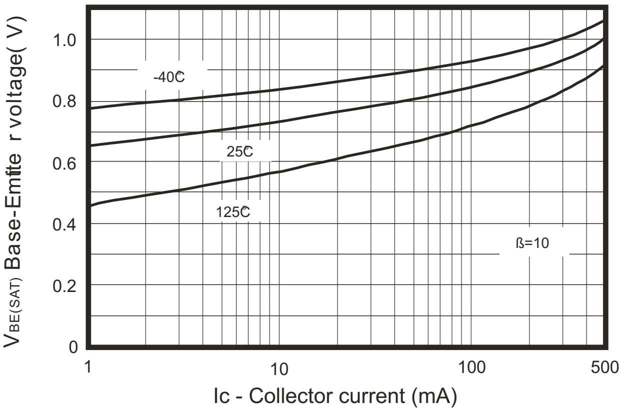


Fig.4 Base emitter ON voltage V.S. Collector current

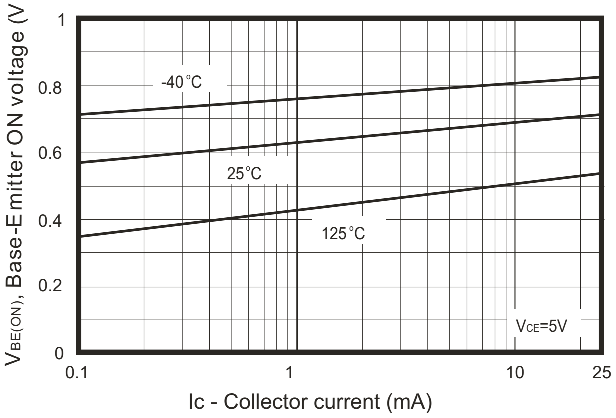


Fig.5 Collector-Cutoff current V.S. Ambient temperature

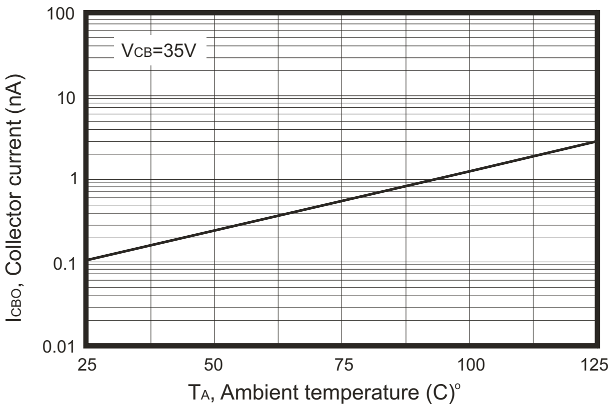
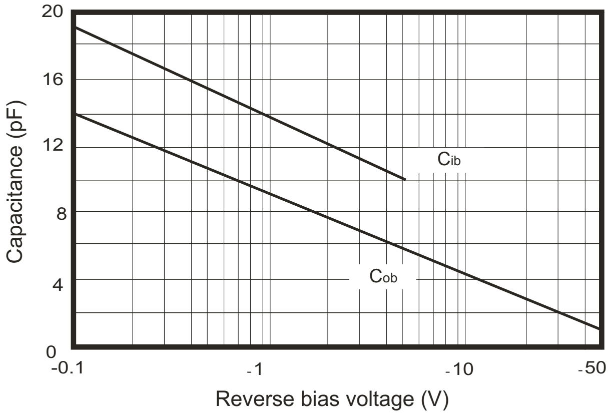


Fig.6 Input and output capacitance V.S. reverse bias voltage



RATING AND CHARACTERISTIC CURVES (MMBT2907A-G)

Fig.7 Switching times V.S collector current

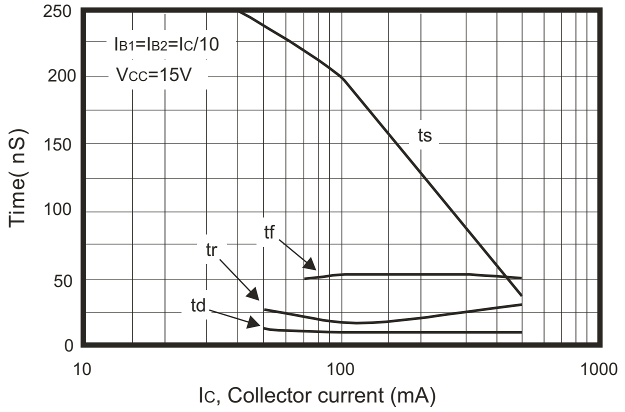


Fig.8 Turn on and turn off times V.S collector current

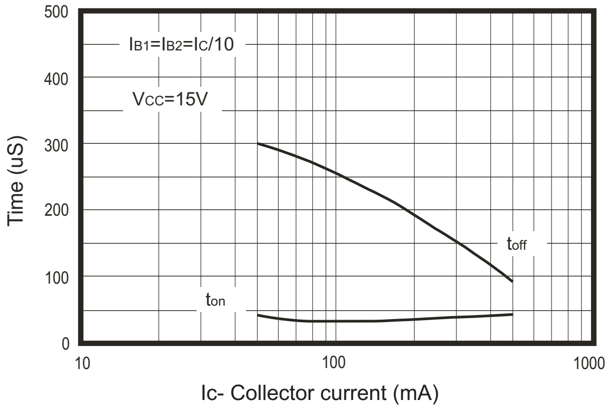


Fig.9 Rise time V.S. Collector and turn on base currents

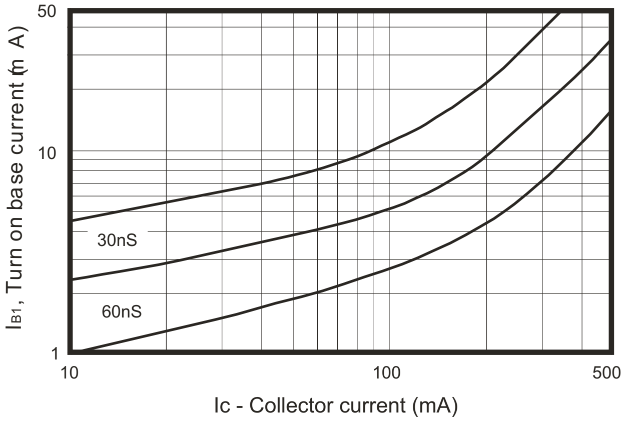


Fig.10 Common emitter characteristics

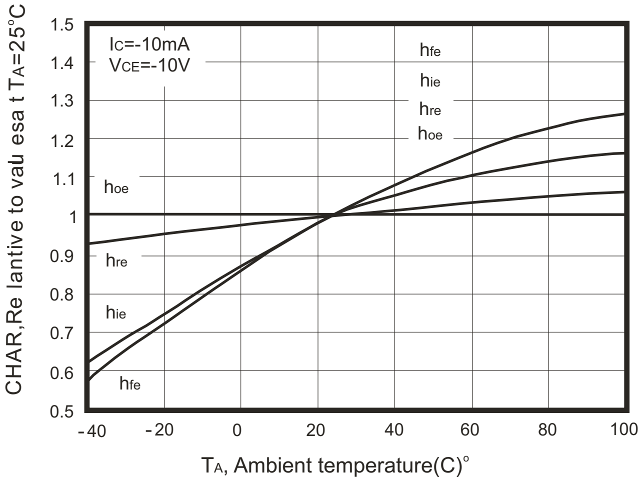


Fig.11 Common emitter characteristics

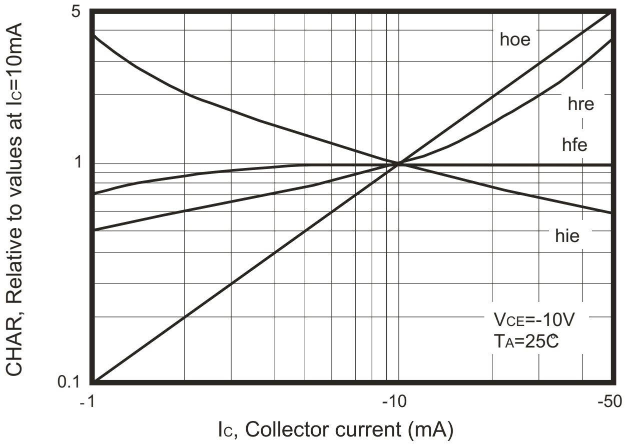


Fig.12 Common emitter characteristics