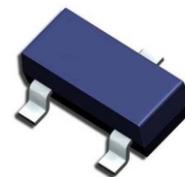


General Purpose Transistor

COMCHIP

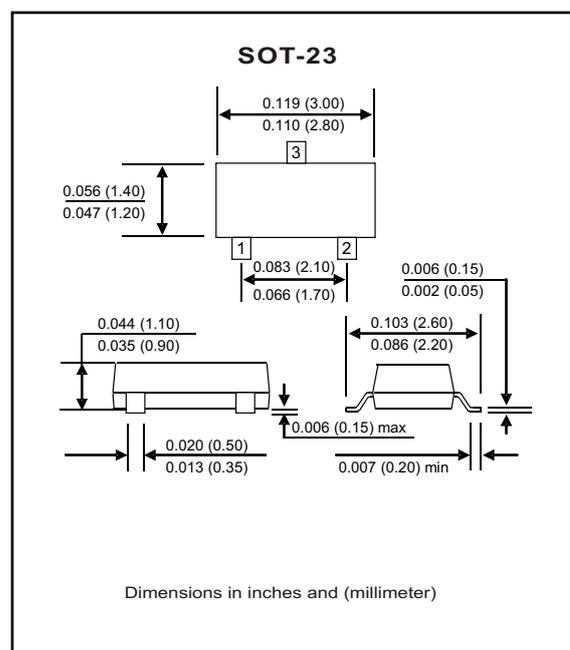
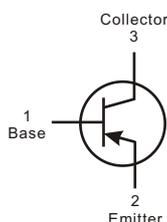
SMD Diodes Specialist

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.



Maximum Ratings(at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Min	Typ	Max	Unit
Collector-Base voltage	V_{CB0}			-60	V
Collector-Emitter voltage	V_{CE0}			-60	V
Emitter-Base voltage	V_{EB0}			-5	V
Collector current-Continuous	I_C			-0.6	A
Total device dissipation	P_D			0.35	W
Thermal resistance junction to ambient	$R_{\theta JA}$			357	$^{\circ}\text{C/W}$
Storage temperature and junction temperature	T_{STG}, T_J	-55		+150	$^{\circ}\text{C}$

Electrical Characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Max	Unit
Collector-Base breakdown voltage	$I_C = 10\mu\text{A}$, $I_E = 0$	V_{CB0}	-60		V
Collector-Emitter breakdown voltage	$I_C = 10\text{mA}$, $I_B = 0$	V_{CEO}^*	-60		V
Emitter-Base breakdown voltage	$I_E = 10\mu\text{A}$, $I_C = 0$	V_{EBO}	-5		V
Collector cut-off current	$V_{CB} = -50\text{V}$, $I_E = 0$	I_{CBO}		-20	nA
Base cut-off current	$V_{CE} = -30\text{V}$, $V_{BE} = -0.5\text{V}$	I_B		-50	nA
Collector cut-off current	$V_{CE} = -30\text{V}$, $V_{BE} = -0.5\text{V}$	I_{CEX}		-50	nA
DC current gain	$V_{CE} = -10\text{V}$, $I_C = -0.1\text{mA}$	$h_{FE(1)}^*$	75		
	$V_{CE} = -10\text{V}$, $I_C = -1\text{mA}$	$h_{FE(2)}^*$	100		
	$V_{CE} = -10\text{V}$, $I_C = -10\text{mA}$	$h_{FE(3)}^*$	100		
	$V_{CE} = -10\text{V}$, $I_C = -150\text{mA}$	$h_{FE(4)}^*$	100	300	
	$V_{CE} = -10\text{V}$, $I_C = -500\text{mA}$	$h_{FE(5)}^*$	50		
Collector-Emitter saturation voltage	$I_C = -150\text{mA}$, $I_B = -15\text{mA}$	$V_{CE(SAT)}^*$		-0.4	V
	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$	$V_{CE(SAT)}^*$		-1.6	V
Base-Emitter saturation voltage	$I_C = -150\text{mA}$, $I_B = -15\text{mA}$	$V_{BE(SAT)}^*$		-1.3	V
	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$	$V_{BE(SAT)}^*$		-2.6	V
Transition frequency	$V_{CE} = -20\text{V}$, $I_C = -50\text{mA}$ $F = 100\text{MHz}$	f_T	200		Mhz
Delay time	$V_{CE} = -30\text{V}$, $I_C = -150\text{mA}$	t_d		10	nS
Rise time	$I_{B1} = I_{B2} = -15\text{mA}$	t_r		40	nS
Storage time	$V_{CE} = -6\text{V}$, $I_C = -150\text{mA}$	t_s		80	nS
Fall time	$I_{B1} = I_{B2} = -15\text{mA}$	t_f		30	nS

* Pulse test: $t_p \leq 300\mu\text{s}$, $\delta \leq 0.02$

RATING AND CHARACTERISTIC CURVES (MMBT2907A-G)

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

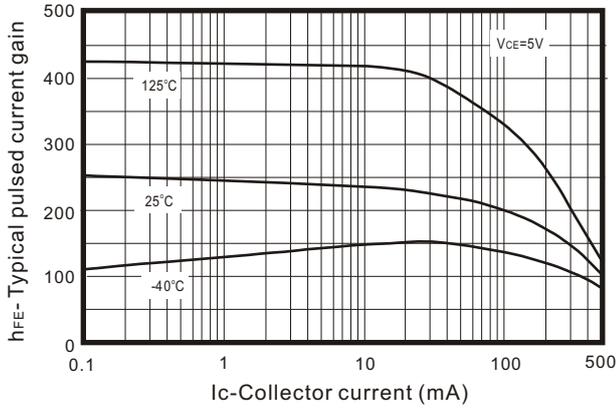


Fig.2 Collector-Emittion saturation voltage V.S. Collector current

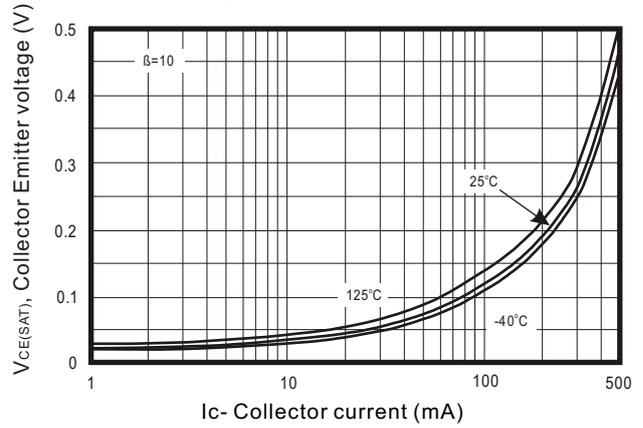


Fig. 3 Base-Emittion saturation Voltage V.S. Collector current

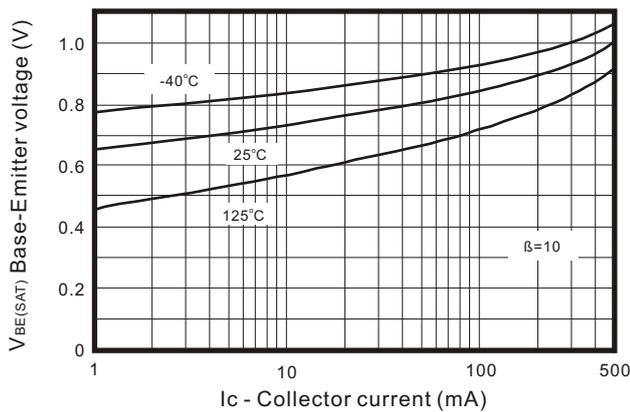


Fig.4 Base emittion ON voltage V.S. Collector current

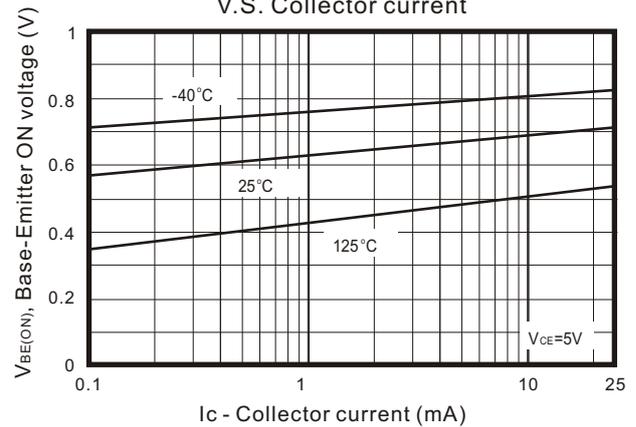


Fig. 5 Collector-Cutoff current V.S. Ambient temperature

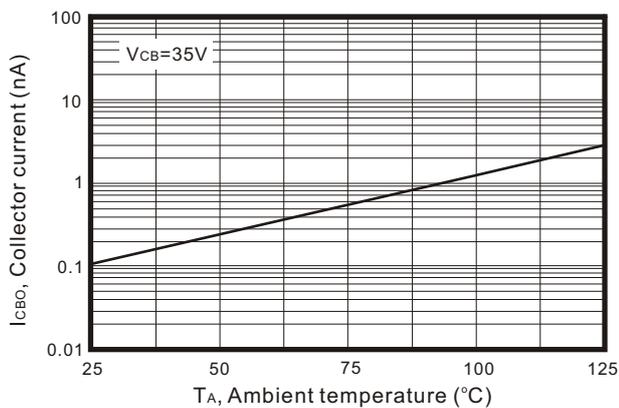
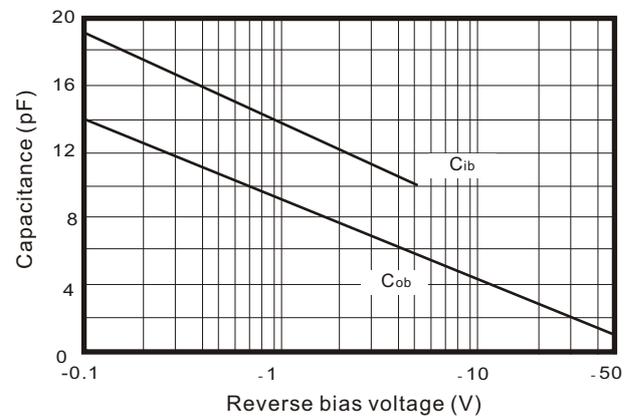


Fig.6 Input and output capacitance V.S. reverse bias voltage



RATING AND CHARACTERISTIC CURVES (MMBT2907A-G)

Fig.7 Switching times
V.S collector current

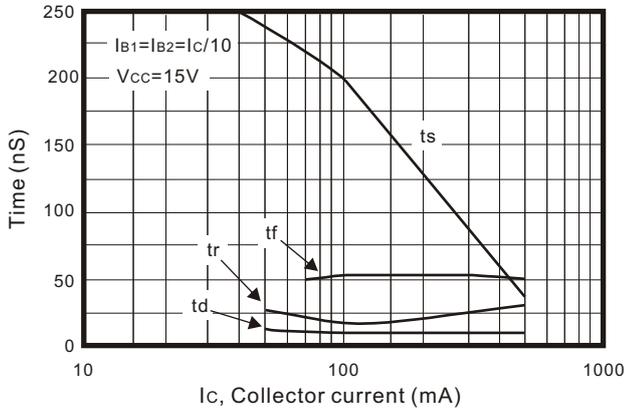


Fig.8 Turn on and turn off times
V.S collector current

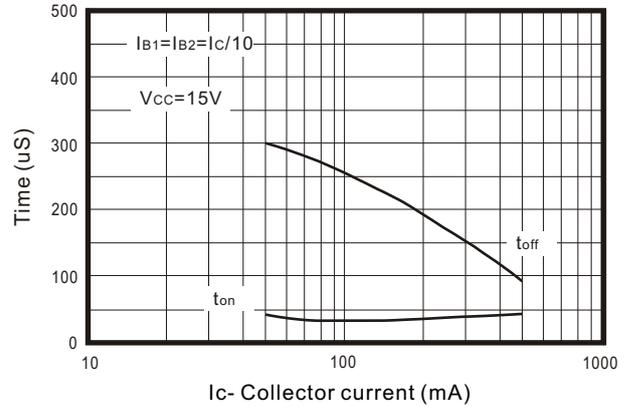


Fig. 9 Rise time V.S. Collector
and turn on base currents

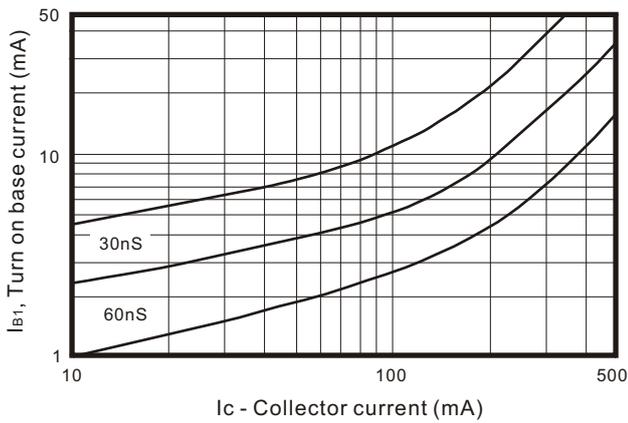


Fig.10 Common emitter characteristics

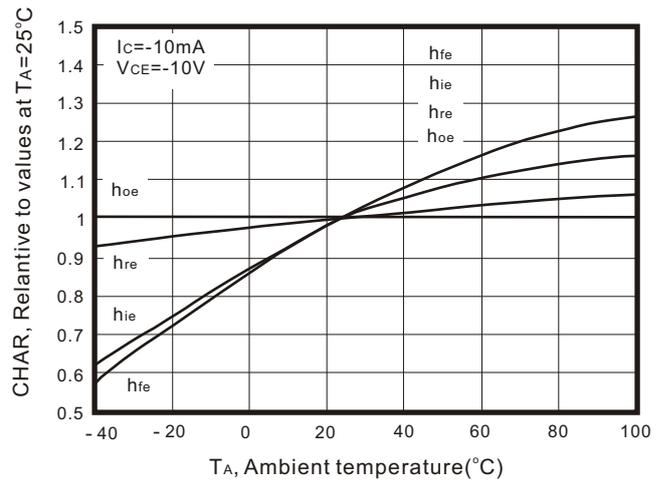


Fig. 11 Common emitter characteristics

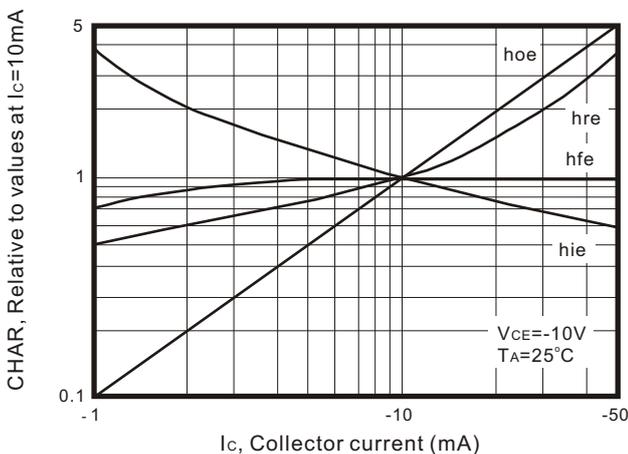


Fig. 12 Common emitter characteristics

