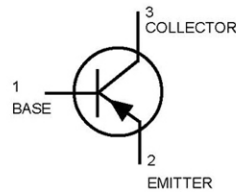
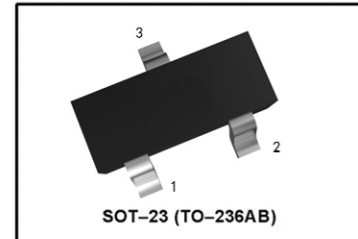


## PNP Silicon



### ● MAXIMUM RATINGS

Rating	Symbol	Value		Unit
		2907	2907A	
Collector–Emitter Voltage	$V_{CEO}$	-40	-60	Vdc
Collector–Base Voltage	$V_{CBO}$		-60	Vdc
Emitter–Base Voltage	$V_{EBO}$		-5.0	Vdc
Collector Current — Continuous	$I_C$		-600	mAdc



### ● THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (1) $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (2) $T_A = 25^\circ\text{C}$	$P_D$	300	mW
Derate above $25^\circ\text{C}$		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

### ● DEVICE MARKING

MMBT2907LT1 = M2B, MMBT2907ALT1 = 2F

### ● ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector–Emitter Breakdown Voltage(3) ( $I_C = -10\text{ mAdc}, I_B = 0$ )	$V_{(BR)CEO}$			Vdc
	MMBT2907	-40	—	
	MMBT2907A	-60	—	
Collector–Emitter Breakdown Voltage( $I_C = -10\ \mu\text{Adc}, I_E = 0$ )	$V_{(BR)CBO}$	-60	—	Vdc
Emitter–Base Breakdown Voltage( $I_E = -10\ \mu\text{Adc}, I_C = 0$ )	$V_{(BR)EBO}$	-5.0	—	Vdc
Collector Cutoff Current( $V_{CB} = -30\text{Vdc}, I_{BE(OFF)} = -0.5\text{Vdc}$ )	$I_{CEX}$	—	-50	nAdc
Collector Cutoff Current ( $V_{CB} = -50\text{Vdc}, I_E = 0$ )	$I_{CBO}$			$\mu\text{Adc}$
	MMBT2907	—	-0.020	
	MMBT2907A	—	-0.010	
( $V_{CB} = -50\text{Vdc}, I_E = 0, T_A = 125^\circ\text{C}$ )	MMBT2907	—	-20	
	MMBT2907A	—	-10	
Base Current( $V_{CE} = -30\text{Vdc}, V_{EB(OFF)} = -0.5\text{Vdc}$ )	$I_B$	—	-50	nAdc

- FR-5 =  $1.0 \times 0.75 \times 0.062$  in.
- Alumina =  $0.4 \times 0.3 \times 0.024$  in. 99.5% alumina.
- Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

● ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise noted) (Continued)

Characteristic	Symbol	Min	Max	Unit
<b>ON CHARACTERISTICS</b>				
DC Current Gain ( $I_C = -0.1\text{mA}$ , $V_{CE} = -10\text{Vdc}$ )	$h_{FE}$	35	—	—
		MMBT2907	75	—
( $I_C = -1.0\text{mA}$ , $V_{CE} = -10\text{Vdc}$ )		50	—	
		MMBT2907A	100	—
( $I_C = -10\text{mA}$ , $V_{CE} = -10\text{Vdc}$ )		75	—	
		MMBT2907A	100	—
( $I_C = -150\text{mA}$ , $V_{CE} = -10\text{Vdc}$ )(3)		—	—	
		MMBT2907A	100	300
( $I_C = -500\text{mA}$ , $V_{CE} = -10\text{Vdc}$ )(3)		30	—	
		MMBT2907A	50	—
Collector–Emitter Saturation Voltage(3) ( $I_C = -150\text{mA}$ , $I_B = -15\text{mA}$ ) ( $I_C = -500\text{mA}$ , $I_B = -50\text{mA}$ )	$V_{CE(sat)}$	—	-0.4	Vdc
		—	-1.6	
Base–Emitter Saturation Voltage(3) ( $I_C = -150\text{mA}$ , $I_B = -15\text{mA}$ ) ( $I_C = -500\text{mA}$ , $I_B = -50\text{mA}$ )	$V_{BE(sat)}$	—	-1.3	Vdc
		—	-2.6	

● SMALL-SIGNAL CHARACTERISTICS

Current–Gain — Bandwidth Product(3),(4) ( $I_C = -50\text{mA}$ , $V_{CE} = -20\text{Vdc}$ , $f = 100\text{MHz}$ )	$f_T$	200	—	MHz
Output Capacitance ( $V_{CB} = -10\text{Vdc}$ , $I_E = 0$ , $f = 1.0\text{MHz}$ )	$C_{obo}$	—	8.0	pF
Input Capacitance ( $V_{EB} = -2.0\text{Vdc}$ , $I_C = 0$ , $f = 1.0\text{MHz}$ )	$C_{ibo}$	—	30	pF

● SWITCHING CHARACTERISTICS

Turn–On Time Delay Time Rise Time	( $V_{CC} = -30\text{Vdc}$ , $I_C = -150\text{mA}$ , $I_{B1} = -15\text{mA}$ )	$t_{on}$ $t^d$ $t_r$	— — —	45 10 40	ns
Fall Time Storage Time Turn–Off Time	( $V_{CC} = -6.0\text{Vdc}$ , $I_C = -150\text{mA}$ , $I_{B1} = I_{B2} = 15\text{mA}$ )	$t_f$ $t_s$ $t_{off}$	— — —	30 80 100	ns

3. Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

4.  $f_T$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to unity.

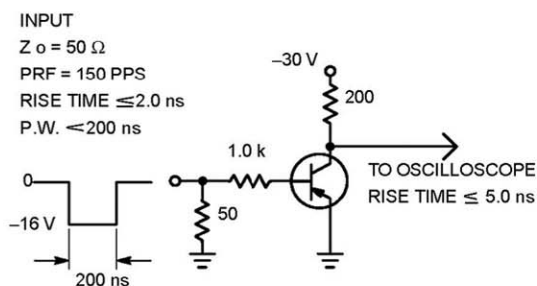


Figure 1. Delay and Rise Time Test Circuit

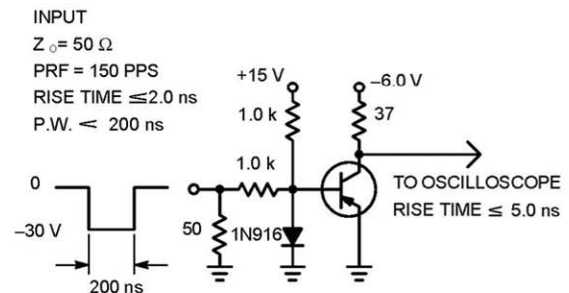
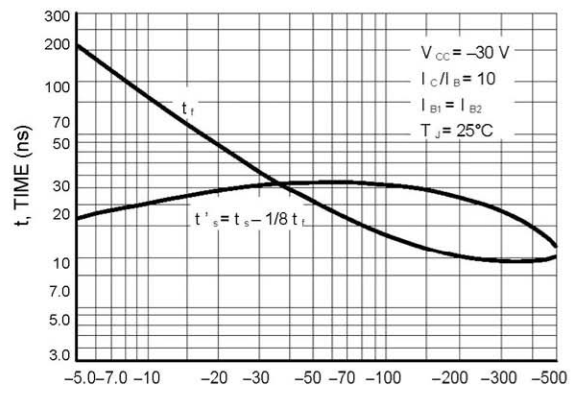
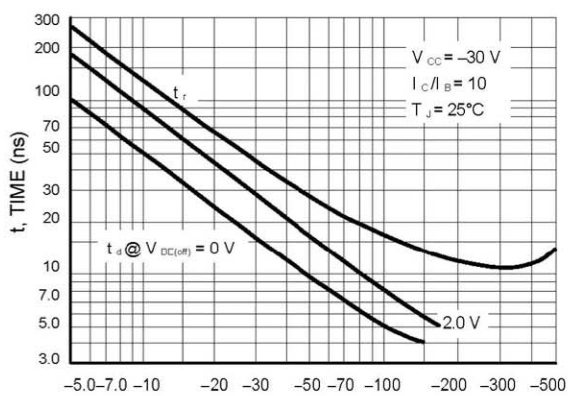
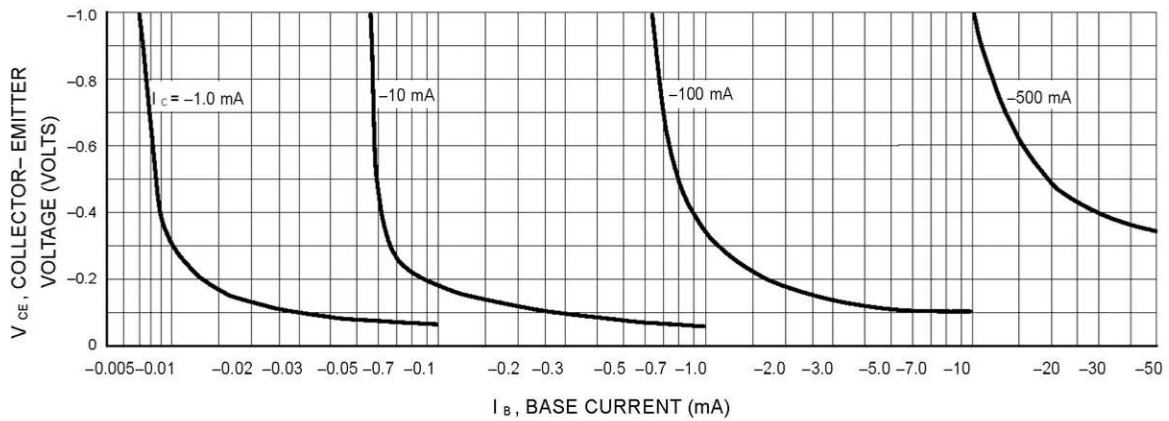
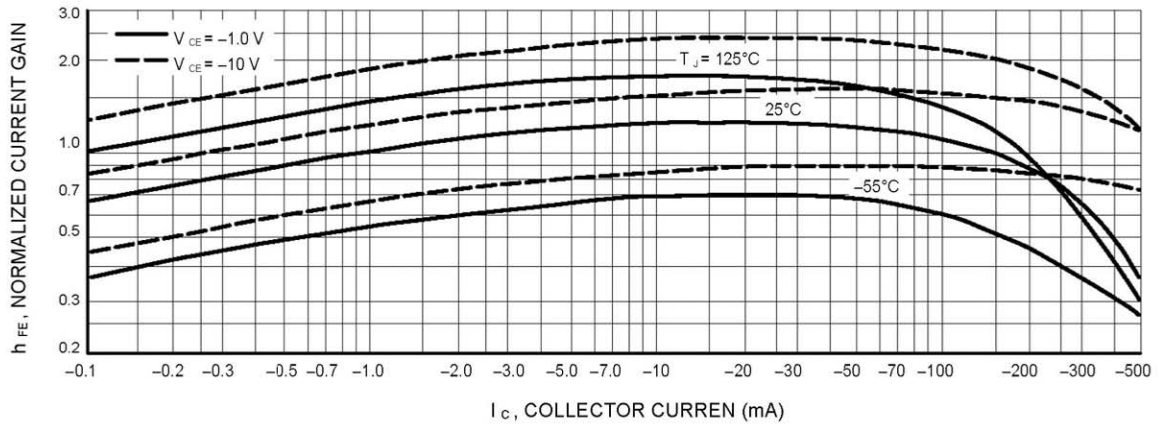


Figure 2. Storage and Fall Time Test Circuit

TYPICAL CHARACTERISTICS



TYPICAL SMALL-SIGNAL CHARACTERISTICS

NOISE FIGURE

$V_{CE} = 10 \text{ Vdc}$ ,  $T_A = 25^\circ\text{C}$

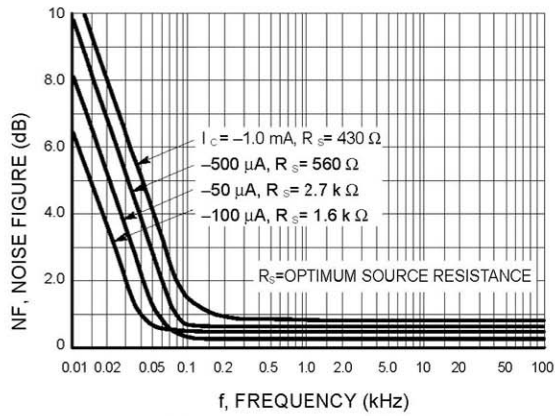


Figure 7. Frequency Effects

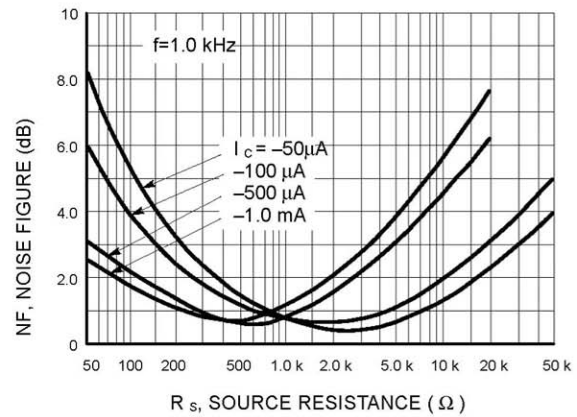


Figure 8. Source Resistance Effects

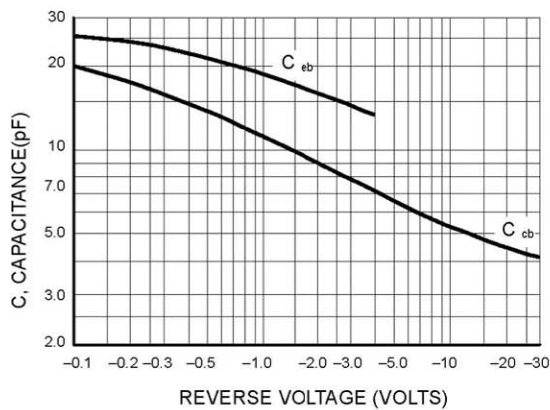


Figure 9. Capacitances

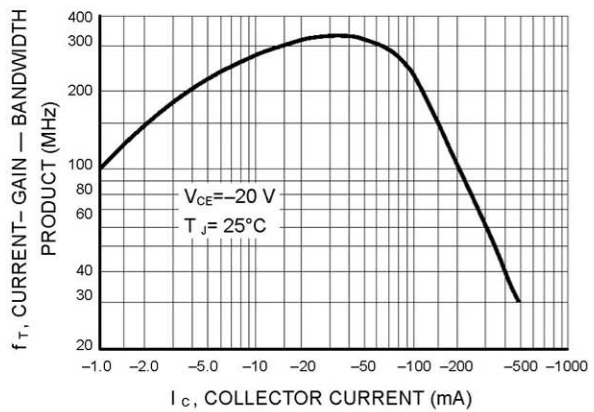


Figure 10. Current-Gain — Bandwidth Product

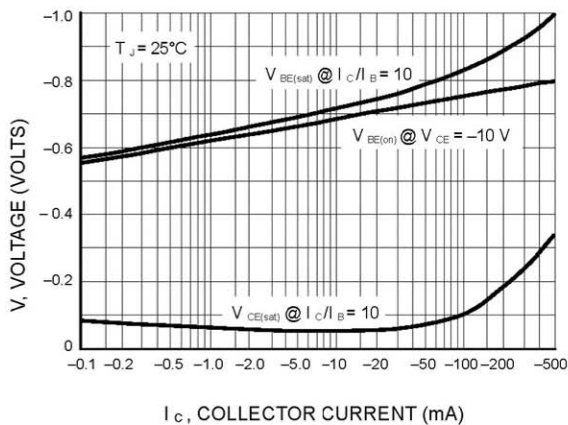


Figure 11. "On" Voltage

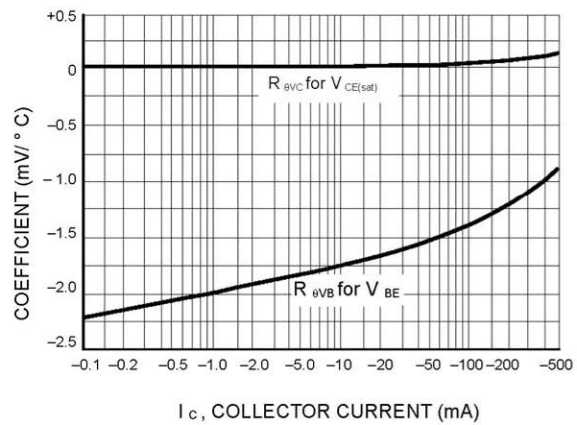


Figure 12. Temperature Coefficients

单击下面可查看定价，库存，交付和生命周期等信息

[>>SHIKUES\(时科\)](#)