

GMBT2907A

PNP EPITAXIAL PLANAR TRANSISTOR

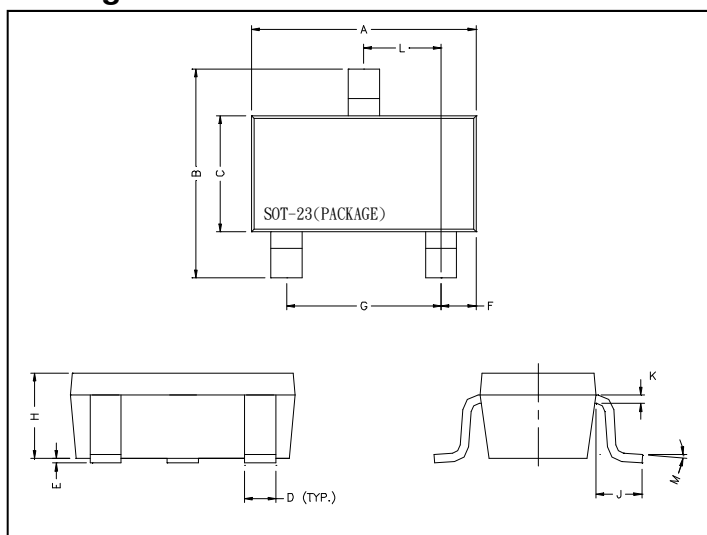
Description

The GMBT2907A is designed for general purpose amplifier and high speed, medium-power switching applications.

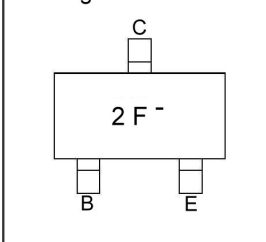
Features

- Low collector saturation voltage
- High speed switching
- For complementary use with NPN type GMBT2222A

Package Dimensions



Marking:



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	1.90	REF.
B	2.40	2.80	H	1.00	1.30
C	1.40	1.60	K	0.10	0.20
D	0.35	0.50	J	0.40	-
E	0	0.10	L	0.85	1.15
F	0.45	0.55	M	0°	10°

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Ratings	Unit
Junction Temperature	Tj	+150	°C
Storage Temperature	Tstg	-55 ~ +150	°C
Collector to Base Voltage at Ta=25°C	VCBO	-60	V
Collector to Emitter Voltage at Ta=25°C	VCEO	-60	V
Emitter to Base Voltage at Ta=25°C	VEBO	-5	V
Collector Current at Ta=25°C	IC	-600	mA
Total Power Dissipation at Ta=25°C	PD	225	mW

Characteristics at Ta = 25°C

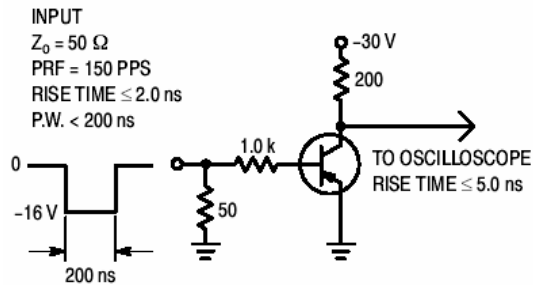
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BVCBO	-60	-	-	V	IC=-10uA, IE=0
BVCEO	-60	-	-	V	IC=-10mA, IB=0
BVEBO	-5	-	-	V	IE=-10uA, IC=0
ICBO	-	-	-10	nA	VCE=-50V, IE=0
ICEX	-	-	-50	nA	VCE=-30V, VBE(OFF)=-0.5V
*VCE(sat)1	-	-0.2	-0.4	V	IC=-150mA, IB=-15mA
*VCE(sat)2	-	-0.5	-1.6	V	IC=-500mA, IB=-50mA
*VBE(sat)1	-	-	-1.3	mV	IC=-150mA, IB=-15mA
*VBE(sat)2	-	-	-2.6	V	IC=-500mA, IB=-50mA
*hFE1	75	-	-		VCE=-10V, IC=-0.1mA
*hFE2	100	-	-		VCE=-10V, IC=-1mA
*hFE3	100	-	-		VCE=-10V, IC=-10mA
*hFE4	100	180	300		VCE=-10V, IC=-150mA
*hFE5	50	-	-		VCE=-10V, IC=-500mA
fT	200	-	-	MHz	VCE=-20V, IC=-50mA, f=100MHz
Cob	-	-	8.0	pF	VCE=-10V, IE=0, f=1MHz

* Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

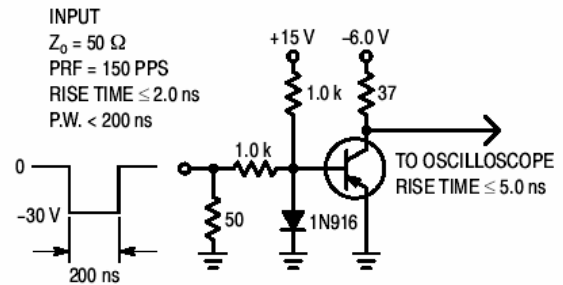
Switching Characteristics

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
t_{on} (Turn-On Time)	-	-	45	ns	$V_{CC} = -30V$, $I_C = -150mA$, $I_{B1} = -15mA$
t_d (Delay Time)	-	-	10	ns	
t_r (Rise Time)	-	-	40	ns	
t_{off} (Turn-Off Time)	-	-	100	ns	$V_{CC} = -6V$, $I_C = -150mA$, $I_{B1} = I_{B2} = -15mA$
t_s (Storage Time)	-	-	80	ns	
t_f (Fall Time)	-	-	30	ns	

Switching Time Equivalent Test Circuits



Delay and Rise Time Test Circuit



Storage and Fall Time Test Circuit

Characteristics Curve

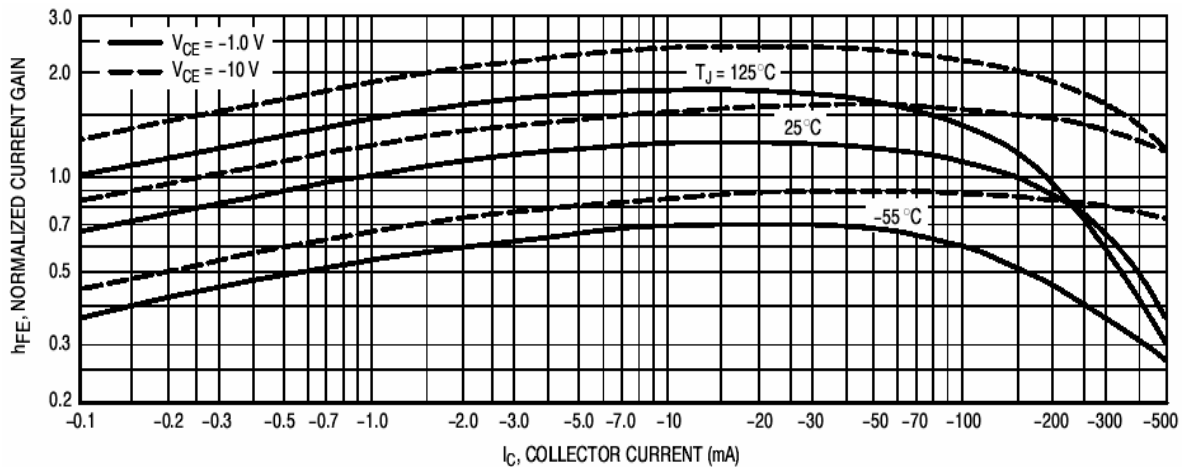


Fig 1. DC Current Gain

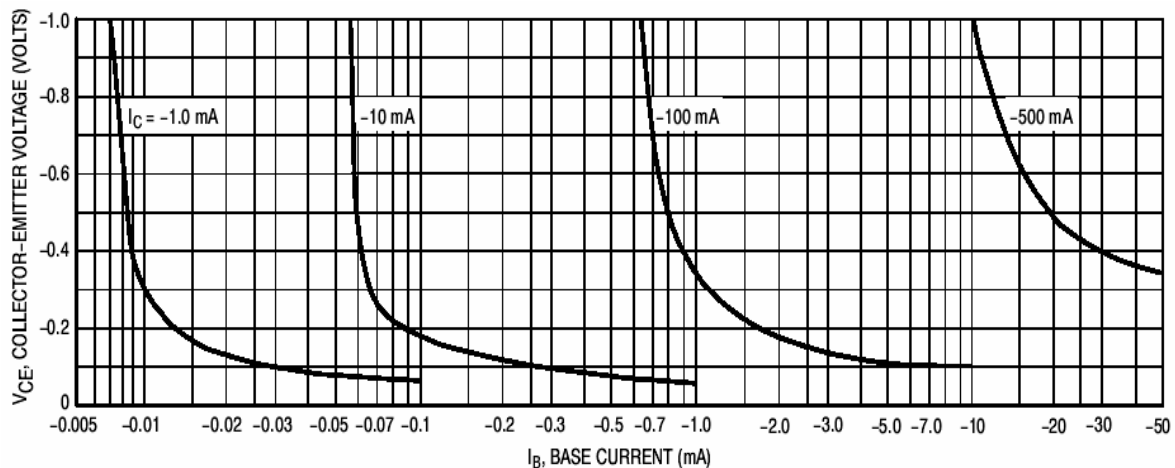


Fig 2. Collector saturation Region

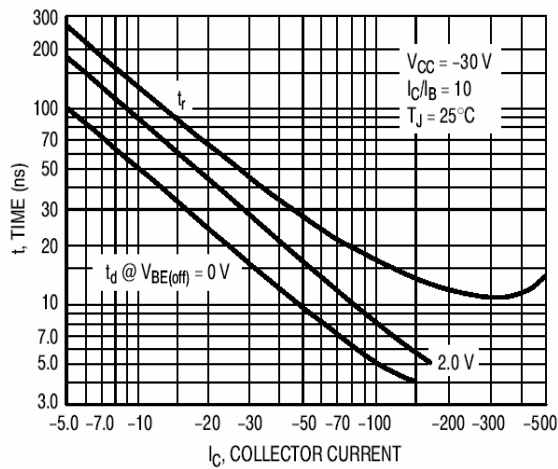


Fig 3. Turn-On Time

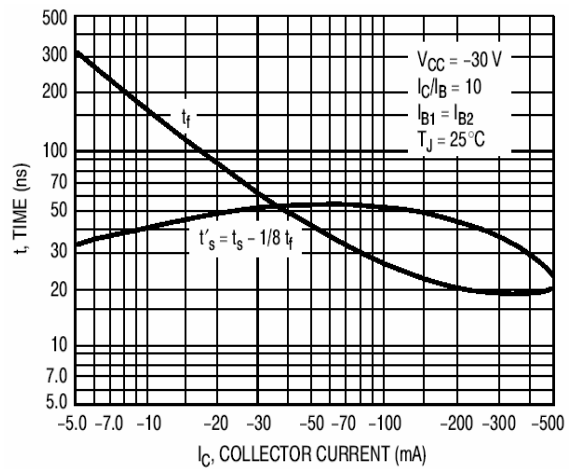


Fig 4. Turn-Off Time

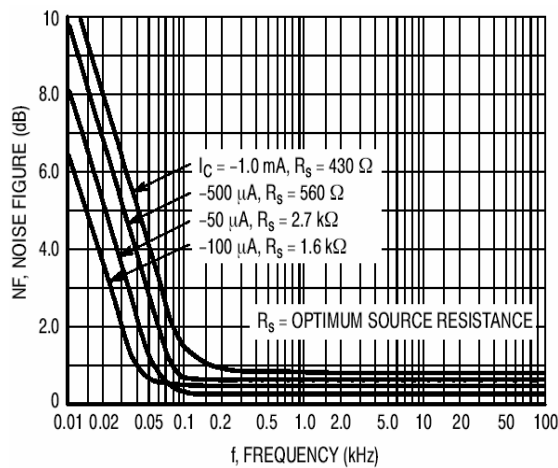


Fig 5. Frequency Effects

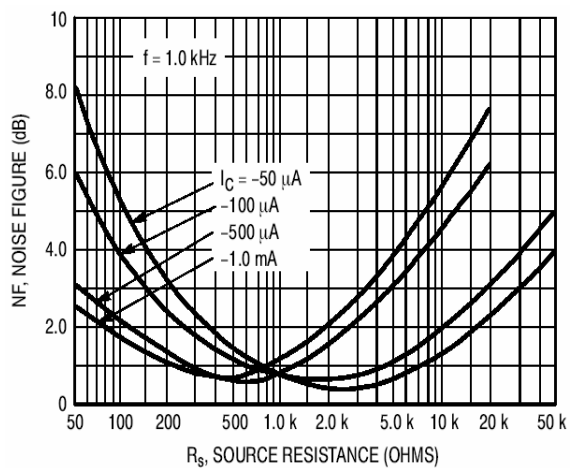


Fig 6. Source Resistance Effects

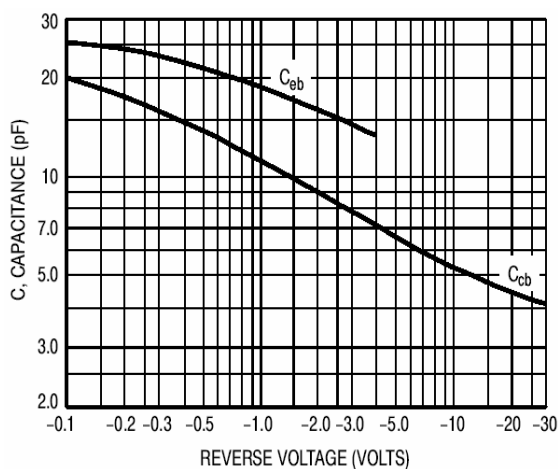


Fig 7. Capacitance

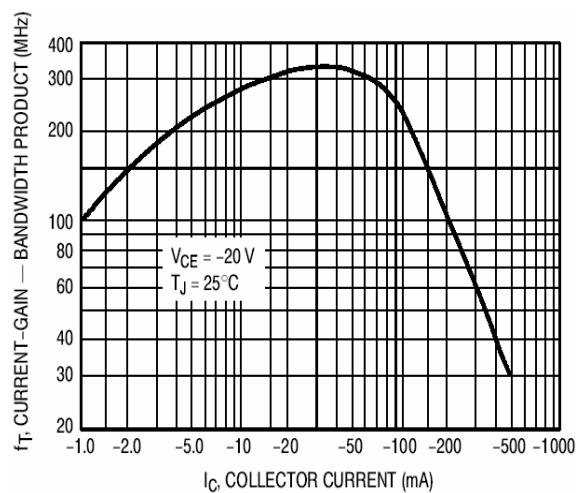


Fig 8. Current-Gain Bandwidth Product

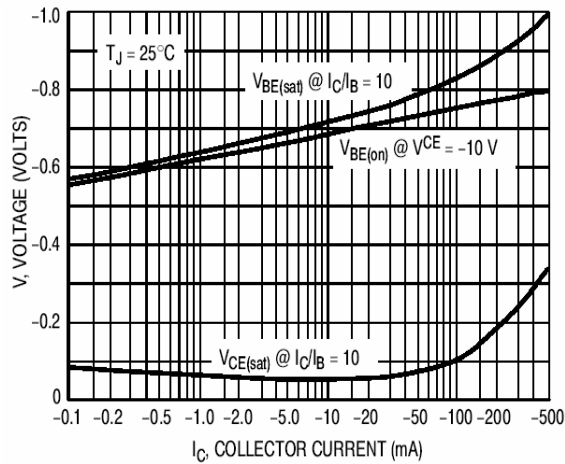


Fig 9. "On" Voltage

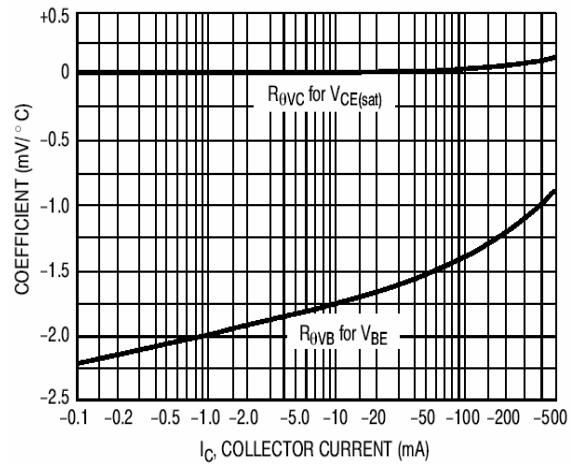


Fig 10. Temperature Coefficients

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