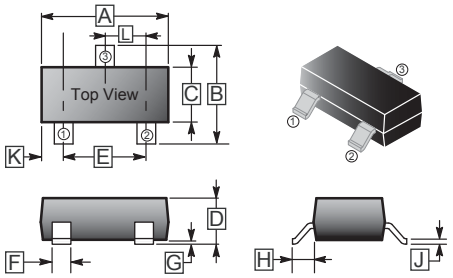
Elektronische Bauelemente

MMBT2907FW

PNP Silicon
General Purpose Transistor

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

SOT-523

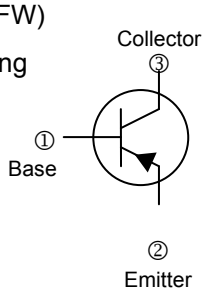


FEATURES

- Epitaxial Planar Die Construction
- Complementary NPN Type Available(MMBT2222FW)
- Ideal for Medium Power Amplification and Switching

MARKING CODE

- MMBT2907FW = 2F



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.50	1.70	G	0.00	0.15
B	1.45	1.75	H	0.28	0.40
C	0.75	0.85	J	0.10	0.20
D	0.70	0.90	K	-	-
E	0.90	1.10	L	0.75	0.85
F	0.25	0.33			

MAXIMUM RATINGS (at T_a = 25°C unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector - Emitter Voltage	V_{CEO}	-60	Vdc
Collector - Base Voltage	V_{CBO}	-60	Vdc
Emitter - Base Voltage	V_{EBO}	-5.0	Vdc
Collector Current - Continuous	I_C	-600	mAdc
Total Device Dissapation FR-5 Board[1] T_A=25℃	P_D	150	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833	℃ / W
Junction & Storage Temperature	T_J, T_{STG}	-55 ~ +150	℃

ELECTRICAL CHARACTERISTICS (at T_a = 25°C unless otherwise specified)

PARAMETER	TEST CONDITIONS	SYMBOL	MIN.	MAX.	UNIT
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage	I_C = -10mAdc, I_B = 0[2]	$V_{(BR)CEO}$	-60	-	Vdc
Collector-Base Breakdown Voltage	I_C = -10 μAdc, I_E = 0	$V_{(BR)CBO}$	-60	-	Vdc
Emitter-Base Breakdown Voltage	I_E = -10 μAdc, I_C = 0	$V_{(BR)EBO}$	-5	-	Vdc
Collector Cut-Off Current	V_{CB} =-50 Vdc, I_E = 0	I_{CBO}	-	-10	nAdc
Emitter Cut-Off Current	V_{EB} = -4 Vdc, I_C = 0	I_{EBO}	-	-10	nAdc
ON CHARACTERISTICS					
DC Current Gain	I_C =-0.1mAdc, V_{CE} = -10 Vdc	h_{FE}	75		
	I_C =-1.0mAdc, V_{CE} = -10 Vdc		100		
	I_C =-10mAdc, V_{CE} = -10 Vdc		100		
	I_C =-150mAdc, V_{CE} = -10 Vdc		100	300	
	I_C =-500mAdc, V_{CE} = -10 Vdc		50		
Collector-Emitter Saturation Voltage	I_C =-150mAdc, I_B = -15 mAdc	$V_{CE(sat)}$	-	-0.4	Vdc
	I_C =-500mAdc, I_B = -50 mAdc			-1.6	Vdc
Base-Emitter Saturation Voltage	I_C =-150mAdc, I_B = -15 mAdc	$V_{BE(sat)}$		-1.3	Vdc
	I_C =-500mAdc, I_B = -50 mAdc			-2.6	Vdc
SMALL SIGNAL CHARACTERISTICS					
Curren-Gain-Bandwidth Product	V_{CE} = -12Vdc, I_C=-2.0mAdc,f=30MHz	F_T	140		MHz
Output capacitance	V_{CB} = -12 Vdc, I_E = 0, f=1MHz	C_{oBO}		5.0	pF
SWITCHING CHARACTERISTICS					
Turn-On Time	V_{CC} = -30 Vdc, I_C = -150 mAdc, I_{B1} = -15 mAdc	T_{on}		45	nS
Delay Time		T_d		10	nS
Rise Time		T_r		40	nS
Turn-Out Time	V_{CC} =-60 Vdc, I_C = -150mAdc, I_{B1}= I_{B2} =-15 mAdc	T_{oFF}		100	nS
Storage Time		T_S		80	nS
Fall Time		T_F		30	nS

Note:1.FR-5=1.0x0.75x0.062 in
2.Pulse Test: Pulse Width=300μ S, Duty Cycle≦ 2.0%

CHARACTERISTIC CURVES

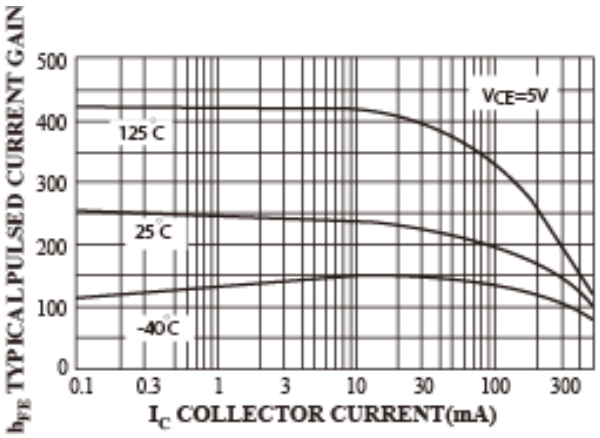


FIG.1 Typical Pulsed Current Gain vs Collector Current

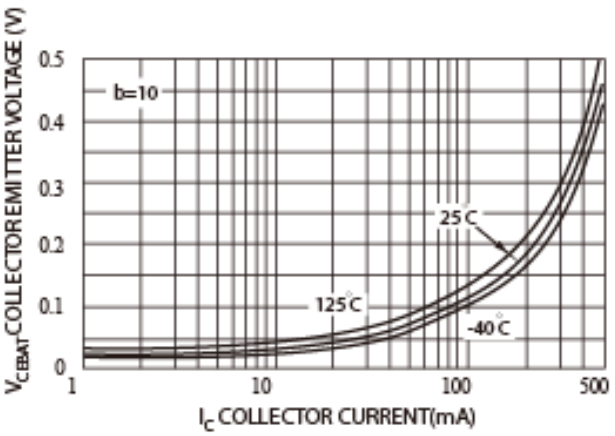


FIG.2 Collector-Emitter Saturation Voltage vs collector Current

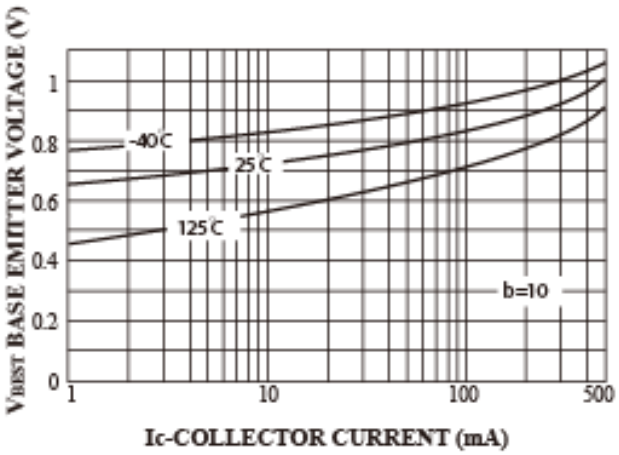


FIG.3 Base-Emitter Saturation Voltage vs Collector Current

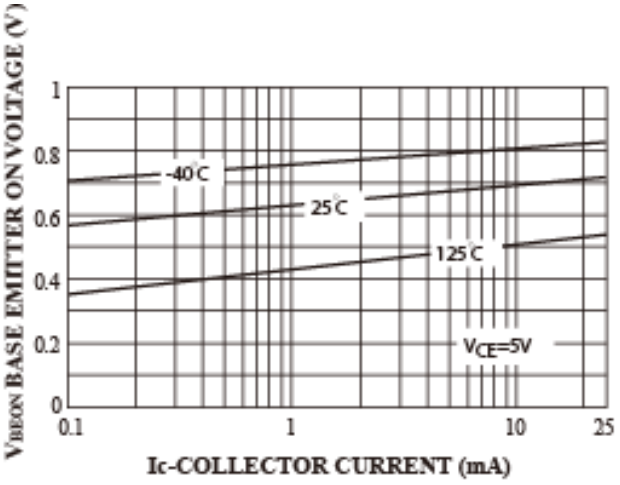


FIG.4 Base Emitter ON Voltage vs Collector Current

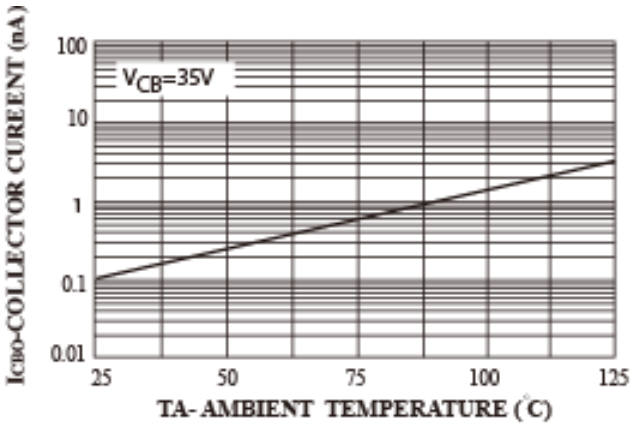


FIG.5 Collector-Cutoff Current vs. Ambient Temperature

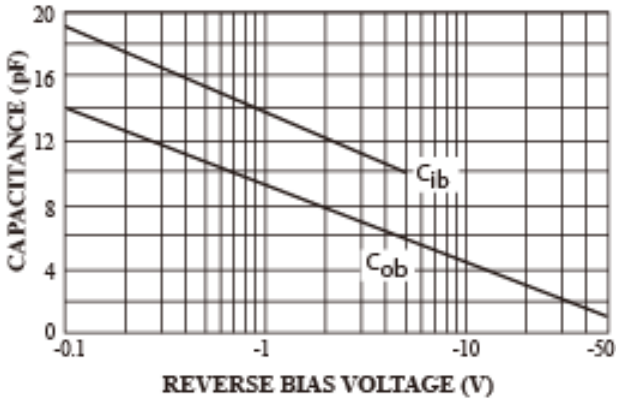


FIG.6 Input and Output Capacitance vs Reverse Bias Voltage

CHARACTERISTIC CURVES

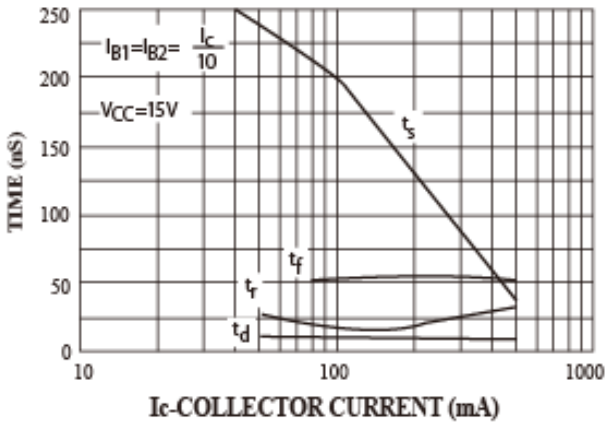


FIG.7 Switching Times vs Collector Current

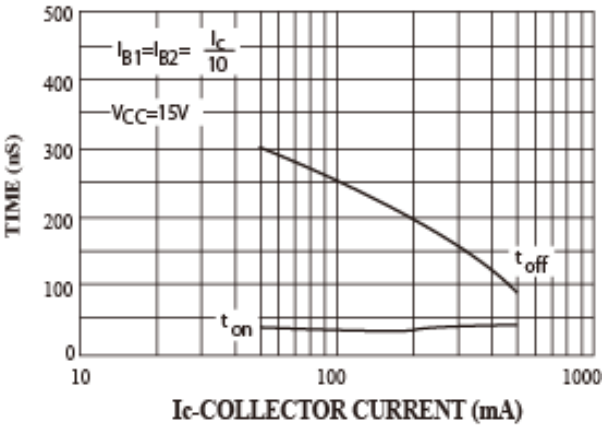


FIG.8 Turn On and Turn Off Times vs Collector Current

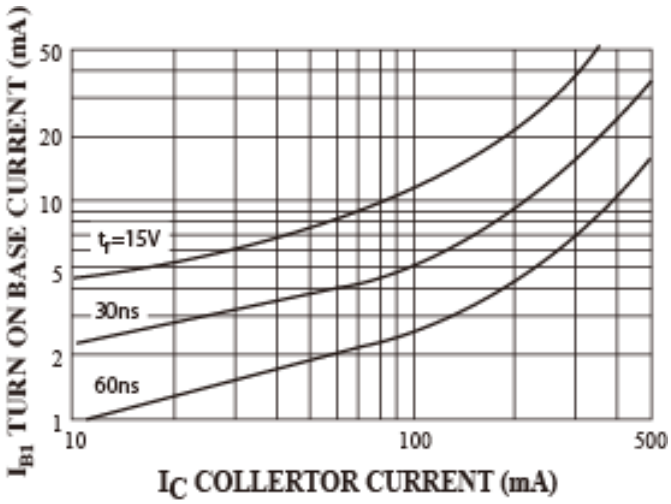


FIG.9 Rise Time vs Collector and Turn On Base Current