Elektronische Bauelemente

MMBT2222AW

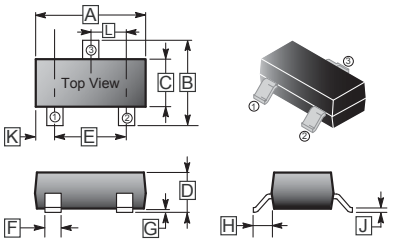
NPN Silicon
General Purpose Transistor

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

SOT-323

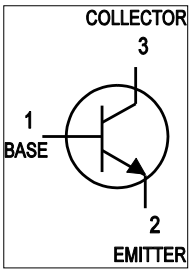
FEATURE

- Complementary PNP Type Available(MMBT2907AW)
- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching



MARKING CODE

MMBT2222AW = K3P, 1P



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100 REF.	
B	1.80	2.45	H	0.525 REF.	
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	-	-
E	1.20	1.40	L	0.650 TYP.	
F	0.20	0.40			

ABSOLUTE MAXIMUM RATINGS at Ta = 25°C

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	75	V
Collector to Emitter Voltage	V_{CEO}	40	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Currrent	I_C	600	mA
Total Power Dissipation	P_C	200	mW
Junction, Storage Temperature	T_J, T_{STG}	+150, -55 ~ +150	℃

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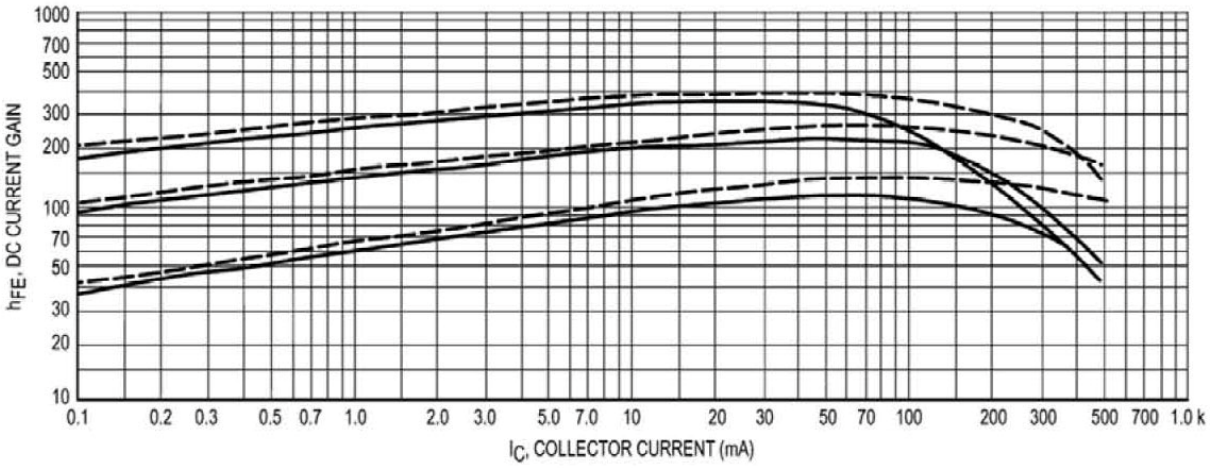
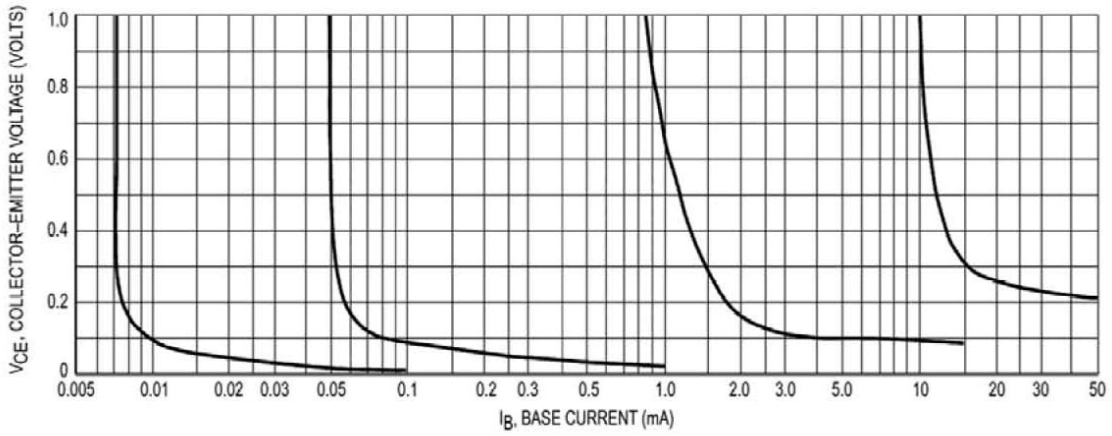
ELECTRICAL CHARACTERISTICS at Ta = 25°C

CHARACTERISTIC	TEST CONDITION	SYMBOL	MIN.	MAX.	UNIT
Collector-Base Breakdown Voltage	I_C=10μA, I_E=0	$V_{(BR)CBO}$	75		V
Collector-Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0	$V_{(BR)CEO}$	40		V
Emitter=Base Breakdown Voltage	I_E=-10μA, I_C=0	$V_{(BR)EBO}$	6		V
Collector Cutoff Current	V_{CB}=70V, I_E=0	I_{CBO}		100	nA
Collector Cutoff Current	V_{EB}=35V, I_C=0	I_{CEO}		100	nA
Emitter Cutoff Current	V_{EB}=3V, I_C=0	I_{EBO}		100	nA
DC Current Gain	V_{CE}=10V, I_C=-0.1mA	h_{FE1}	35		
	V_{CE}=10V, I_C=1mA	h_{FE2}	50		
	V_{CE}=10V, I_C=10mA	h_{FE3}	75		
	V_{CE}=10V, I_C=150mA	h_{FE4}	100	300	
	V_{CE}=10V, I_C=500mA	h_{FE5}	40		
	V_{CE}=1V, I_C=500mA	h_{FE6}	35		
Collector-emitter Saturation Voltage	I_C=500mA, I_B=50mA	$V_{CE(sat)}$		1	V
	I_C=150mA, I_B=15mA	$V_{CE(sat)}$		0.3	V
Base-Emitter Saturation Voltage	I_C=500mA, I_B=50mA	$V_{BE(sat)}$		2.0	V
	I_C=150mA, I_B=15mA	$V_{BE(sat)}$		1.2	V
Transition Frequency	V_{CE}=20V, I_C=20mA, f=1MHz	f_T	300		MHz
Output Capacitance	V_{CB}=10V, I_E=0, f=1MHz	C_{ob}		8	pF
Delay Time	V_{cc}=30V, $V_{BE(Off)}$=-0.5V I_C=150mA, I_{B1}=15mA	T_d		10	nS
Rise Time		T_r		25	nS
Storage Time	V_{cc}=30V, I_C=150mA I_{B1}=- I_{B2} =15mA	T_S		225	nS
Fall Time		T_F		60	nS

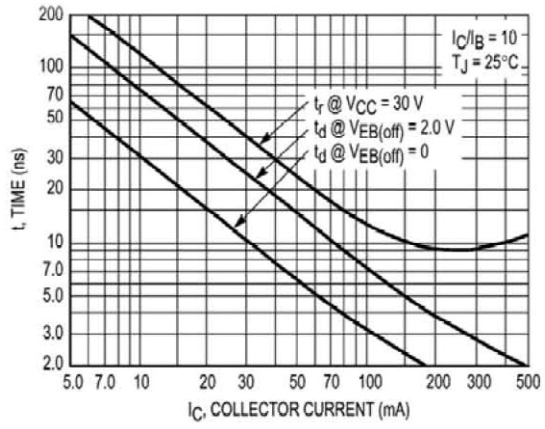
CHARACTERISTIC CURVES



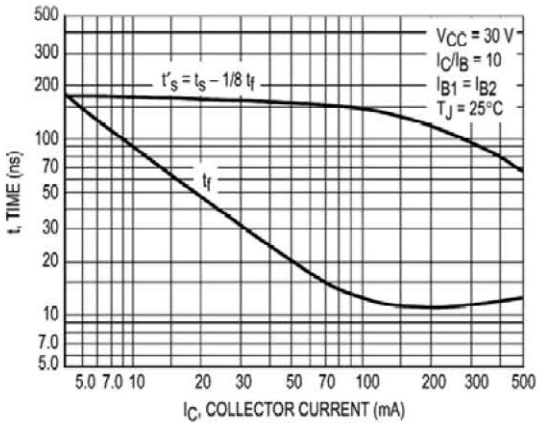
DC Current Gain



Collector Saturation Region



Turn–On Time



Turn–Off Time

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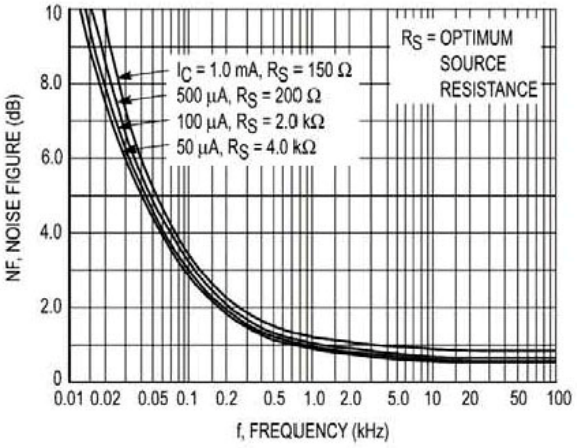
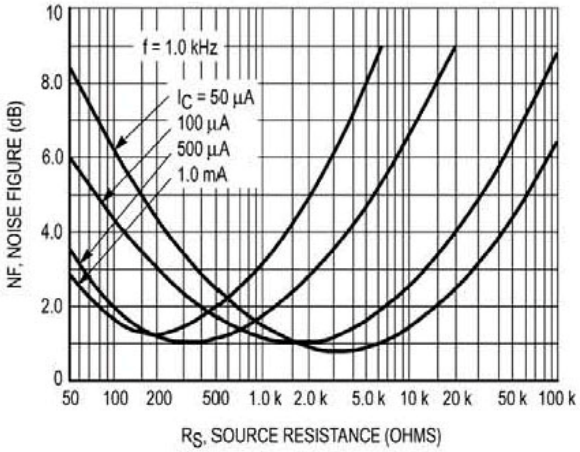
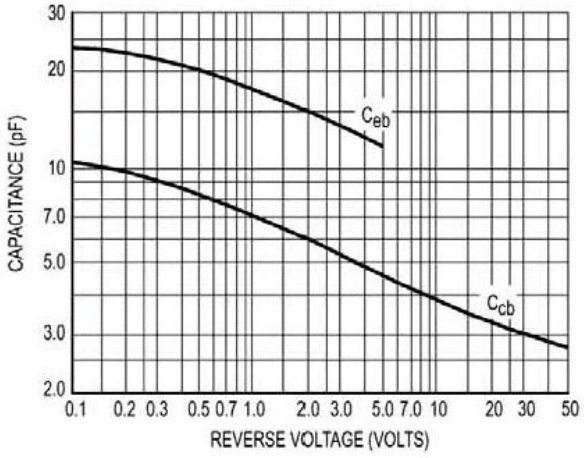


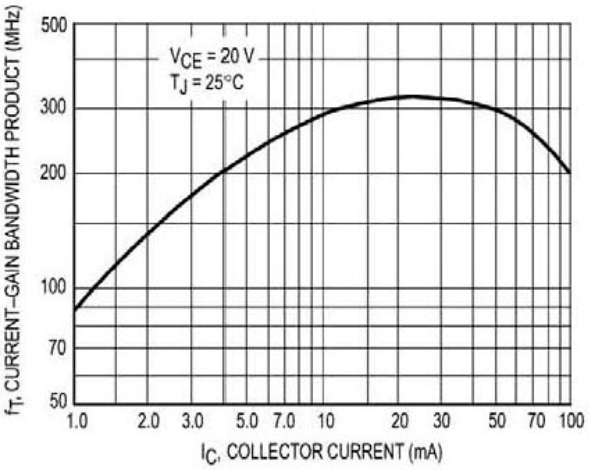
Frequency Effects



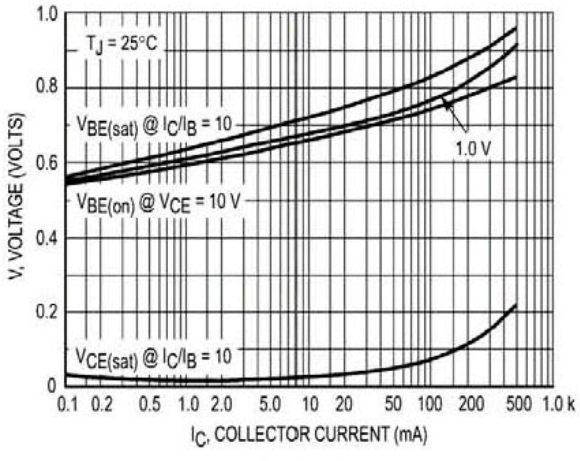
Source Resistance Effects



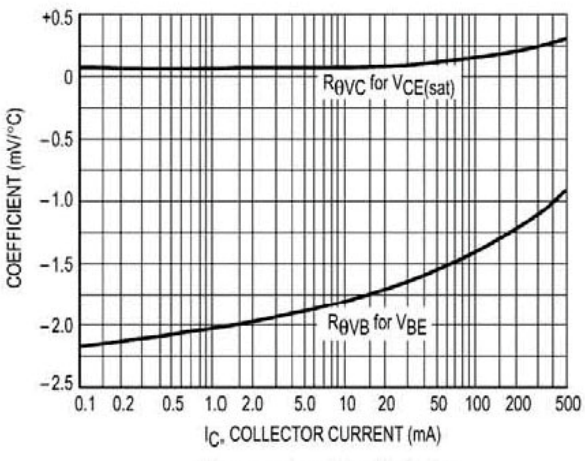
Capacitances



Current–Gain Bandwidth Product



"On" Voltages



Temperature Coefficients