Elektronische Bauelemente

MMBT589

-1A , -50V

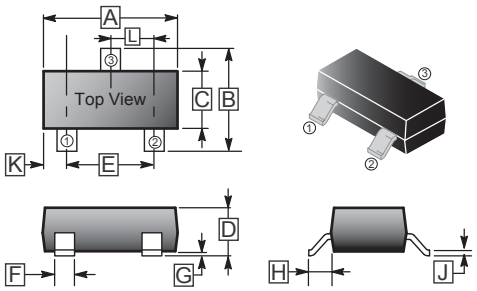
PNP Plastic Encapsulated Transistor

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

FEATURES

- High current surface mount PNP silicon switching transistor for Load management in portable applications

SOT-23

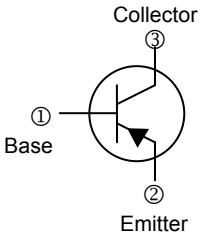


MARKING

589

PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7' inch



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.04	G	-	0.18
B	2.10	2.80	H	0.40	0.60
C	1.20	1.60	J	0.08	0.20
D	0.89	1.40	K	0.6 REF.	
E	1.78	2.04	L	0.85	1.15
F	0.30	0.50			

MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector - Base Voltage	V_{CBO}	-50	V
Collector - Emitter Voltage	V_{CEO}	-30	V
Emitter - Base Voltage	V_{EBO}	-5	V
Collector Current - Continuous	I_C	-1	A
Collector Power Dissipation	P_C	310	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	403	°C / W
Junction, Storage Temperature	T_J, T_{STG}	150, -55~150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-50	-	-	V	I_C= -100μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-30	-	-	V	I_C= -10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-5	-	-	V	I_E= -100μA, I_C=0
Collector Cut-Off Current	I_{CBO}	-	-	-0.1	μA	V_{CB}= -30V, I_E=0
Collector-emitter cut-off current	I_{CES}	-	-	-0.1	μA	V_{CES}= -30V
Emitter Cut-Off Current	I_{EBO}	-	-	-0.1	μA	V_{EB}= -4V, I_C=0
DC Current Gain	h_{FE}	100	-	-		V_{CE}= -2V, I_C= -1mA
		100	-	300		V_{CE}= -2V, I_C= -500mA
		80	-	-		V_{CE}= -2V, I_C= -1A
		40	-	-		V_{CE}= -2V, I_C= -2A
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	-0.25	V	I_C= -500mA, I_B = -50mA
		-	-	-0.3		I_C= -1A, I_B = -100mA
		-	-	-0.65		I_C= -2A, I_B = -200mA
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	-1.2	V	I_C= -1A, I_B = -100mA
Transition frequency	f_T	100	-	-	MHz	V_{CE}= -5V,I_C= -100mA, f=100MHz
Collector Output Capacitance	C_{ob}	-	-	15	pF	f=1MHz

CHARACTERISTIC CURVES

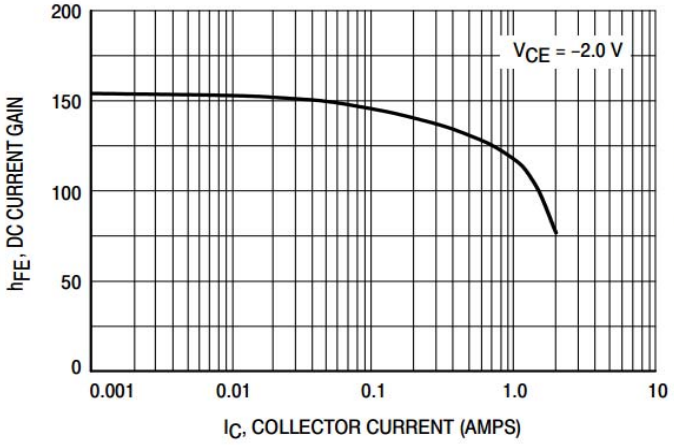


Figure 1. DC Current Gain versus Collector Current

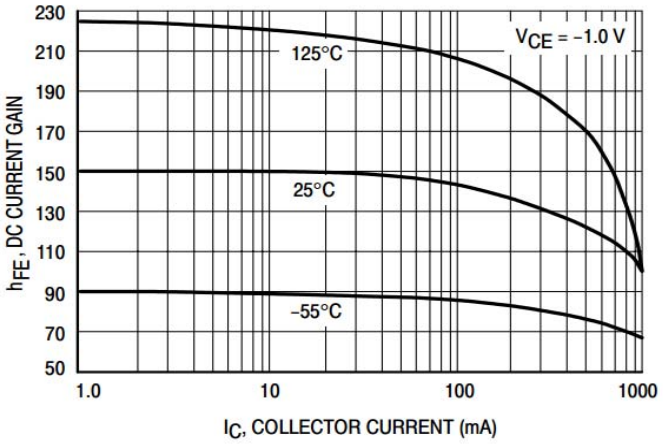


Figure 2. DC Current Gain versus Collector Current

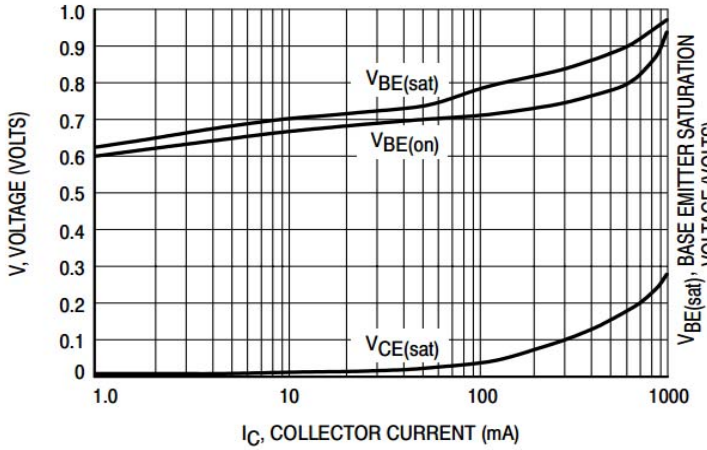


Figure 3. "On" Voltages

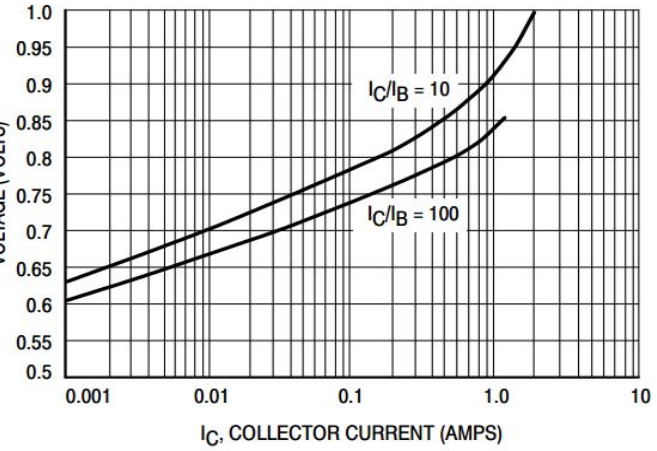


Figure 4. Base Emitter Saturation Voltage versus Collector Current

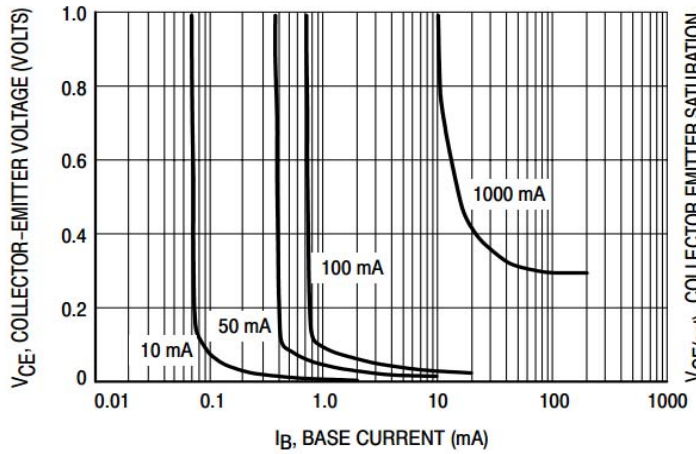


Figure 5. Collector Emitter Saturation Voltage versus Collector Current

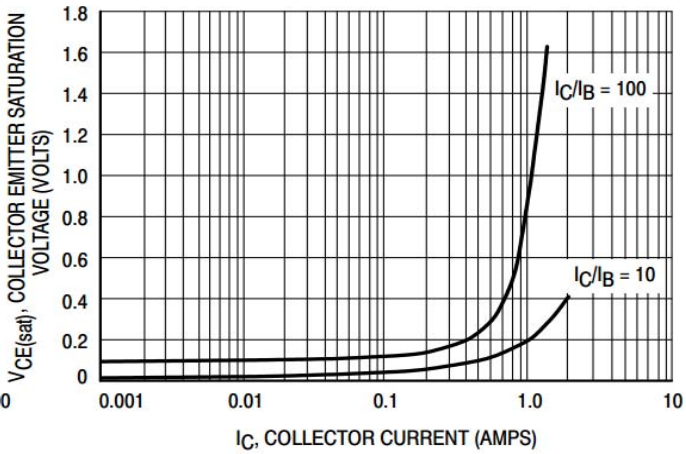


Figure 6. Collector Emitter Saturation Voltage versus Collector Current

CHARACTERISTIC CURVES

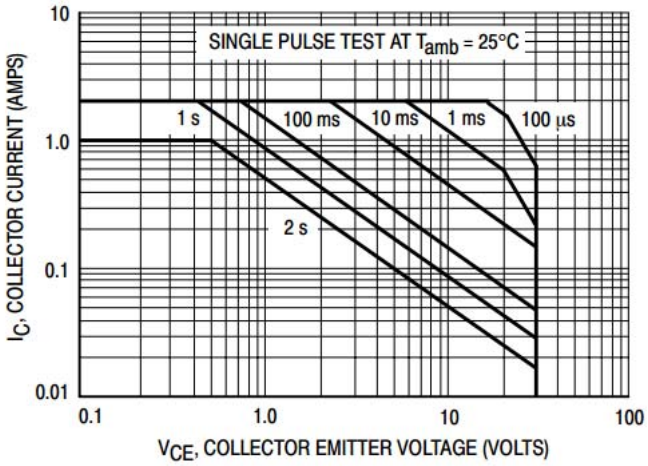


Figure 7. Safe Operating Area

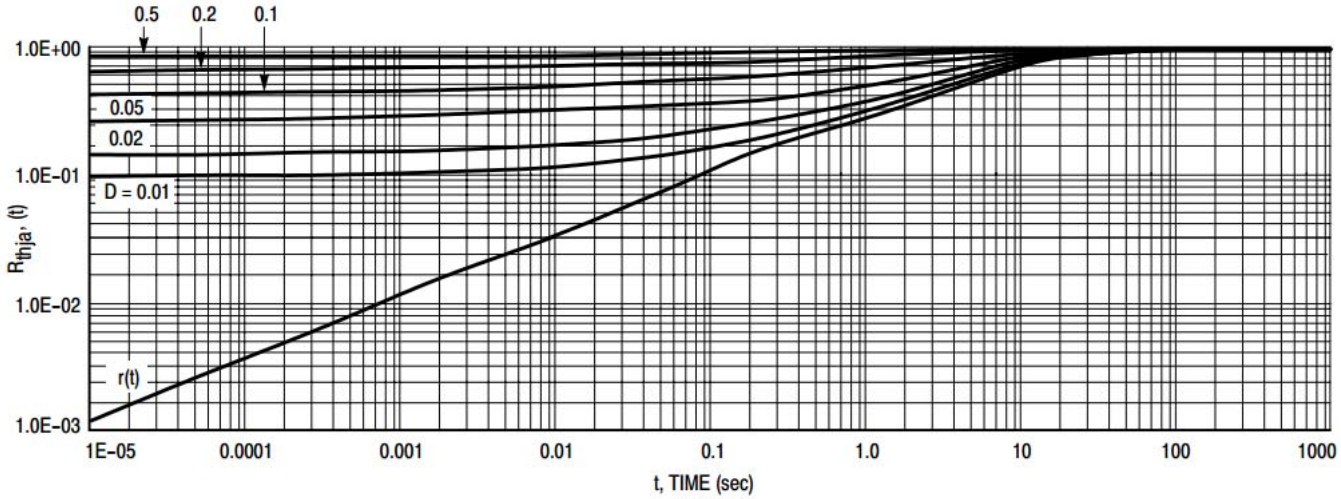


Figure 8. Normalized Thermal Response