Single Bipolar Transistor

multicomp PRO

RoHS Compliant

Features

- Ideal for Medium Power Amplification and Switching

Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}		
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	-0.2	A
Collector Power Dissipation	P_C	0.2	W
Junction Temperature	T_J	150	°C
Storage temperature range	T_{stg}	-55 to +150	

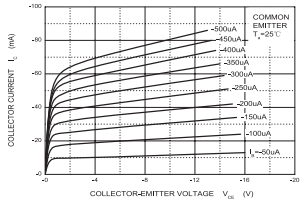
Electrical Characteristics (Ta = 25°C

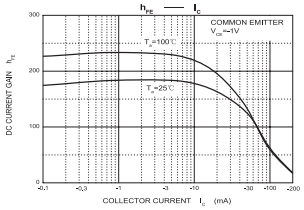
Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	I_C= -100 μA, I_E = 0	-40		V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C = -1 mA, I_B = 0			
Emitter-Base Breakdown Voltage	V_{EBO}	I_E = -100 μA, I_C = 0	-6		
Collector-base cut-off current	I_{CBO}	V_{CB}=-40V, I_E=0		-100	nA
Collector- emitter cut-off current	I_{CEX}	V_{CE}=-30V, $V_{EB(off)}$=3V		-50	
Emitter cut-off current	I_{EBO}	V_{EB}= -5V, I_C=0		-100	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-10 mA, I_B=-1mA		-0.2	V
		I_C=-50 mA, I_B=-5mA		-0.3	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -10 mA; I_B = -1 mA	-0.65	-0.85	
		I_C = -50 mA; I_B = -5 mA		-0.95	
DC current gain	h_{FE} (1)	V_{CE}=-1V, I_C= -10mA	100	300	
	h_{FE} (2)	V_{CE}=-1V, I_C= -50mA	60		
	h_{FE} (3)	V_{CE}=-1V, I_C= -100mA	30		
Delay time	t_d	V_{CC}=-3V, V_{BE}=0.5V I_C=-10mA, I_{B1}=-1mA		35	ns
Rise time	t_r				
Storage time	t_s	V_{CC} = -3V, I_C = -10mA, I_{B1} = I_{B2} = -1mA		225	
Fall time	t_f			75	
Collector input capacitance	C_{ib}	V_{EB}= -0.5V, I_E= 0, f=1MHz		10	pF
Collector output capacitance	C_{ob}	V_{CB}= -5V, I_E= 0, f=1MHz		4.5	
Transition frequency	f_T	V_{CE}= -20V, I_C= -10mA, f=100MHz	250		MHz

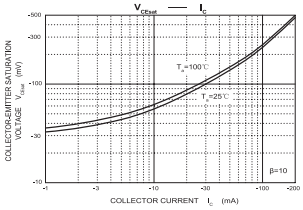
* pulse test: Pulse Width ≤300μs, Duty Cycle≤ 2.0%

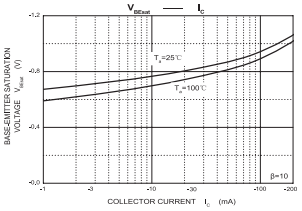
Single Bipolar Transistor

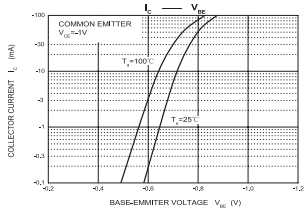
Typical Characterisitics

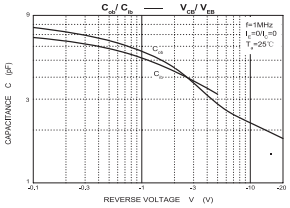


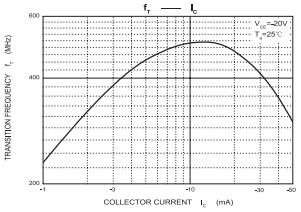


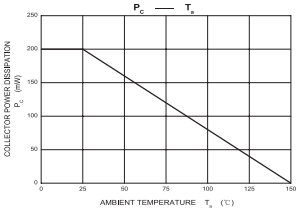




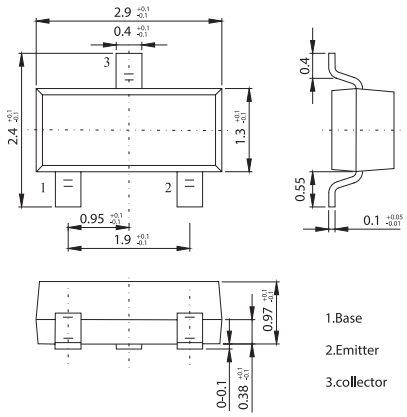








Diagram



Dimensions : Millimetres

Part Number Table

Description	Part Number
Single Bipolar Transistor, PNP, -0.2A, -40V, SOT 23	MMBT3906