Single Bipolar Transistor

RoHS Compliant

Features

- High breakdown voltage
- Low collector-emitter saturation voltage

Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}		
Emitter - Base Voltage	V_{EBO}	5	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	350	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	357	°C/W
Junction Temperature	T_J	150	°C
Storage temperature range	T_{stg}	-55 to +150	

Electrical Characteristics (Ta = 25°C

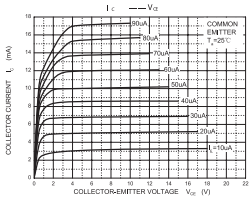
Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	V_{CBO}	I_C= 100 µA, I_E = 0	300		V
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C = 1mA, I_B = 0			
Emitter-Base Breakdown Voltage	V_{EBO}	I_E = 100 µA, I_C = 0	5		
Collector-base cut-off current	I_{CBO}	V_{CB}=200V, I_E=0		0.1	uA
Emitter cut-off current	I_{EBO}	V_{EB}= 5V, I_C=0			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=20 mA, I_B=2mA		0.2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 20 mA; I_B = 2mA		0.9	
DC current gain	h_{FE} (1)	V_{CE}=10V, I_C= 1mA	60		
	h_{FE} (2)	V_{CE}=10V, I_C= 10mA	100	300	
	h_{FE} (3)	V_{CE}=10V, I_C= 30mA	60		
Transition frequency	f_T	V_{CE}= 20V, I_C= 10mA, f=30MHz	50		MHz

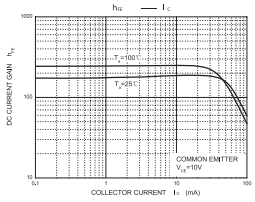
Classification of hfe(2)

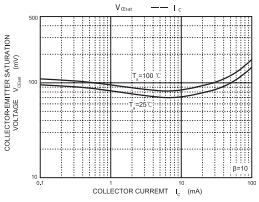
Type	MMBTA42
Range	100-300
Marking	1D

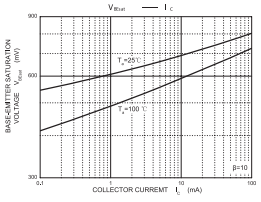
Single Bipolar Transistor

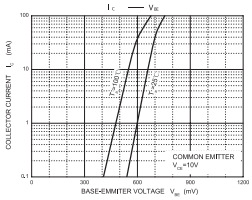
Typical Characterisitics

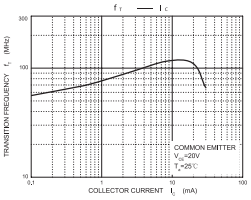


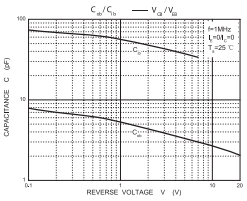


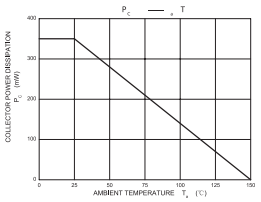




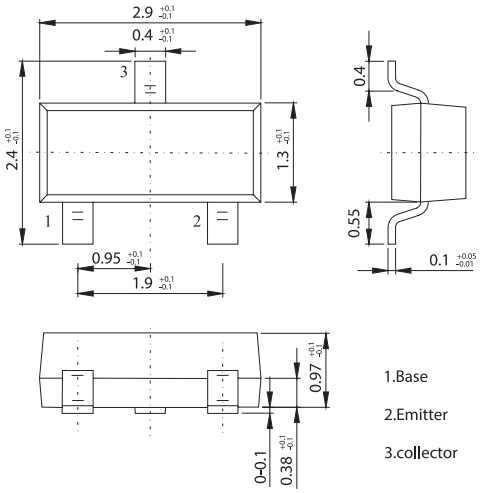








Diagram



1.Base

2.Emitter

3.collector

Part Number Table

Description	Part Number
Single Bipolar Transistor, NPN, 0.5A, 300V, SOT 23	MMBTA42

Dimensions : Millimetres