

Single Bipolar Transistor multicom^{PRO}

RoHS
Compliant



Features

- High breakdown voltage
- Low collector-emitter saturation voltage

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to +150	

Electrical Characteristics $(T_a = 25^\circ\text{C})$

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

Classification of $h_{FE(2)}$

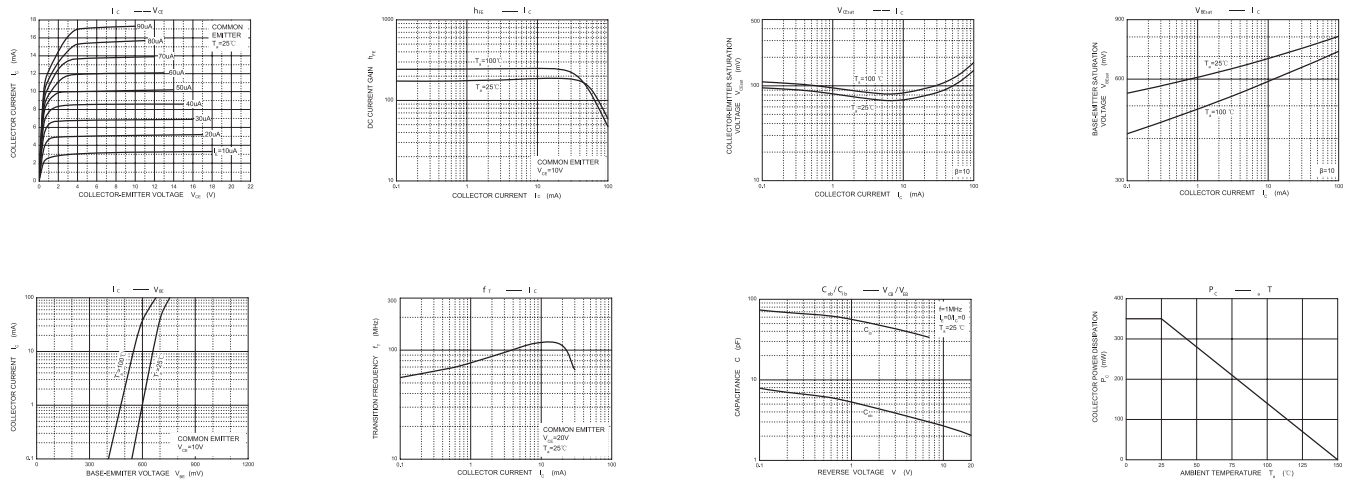
Type	MMBTA42
Range	100-300
Marking	1D

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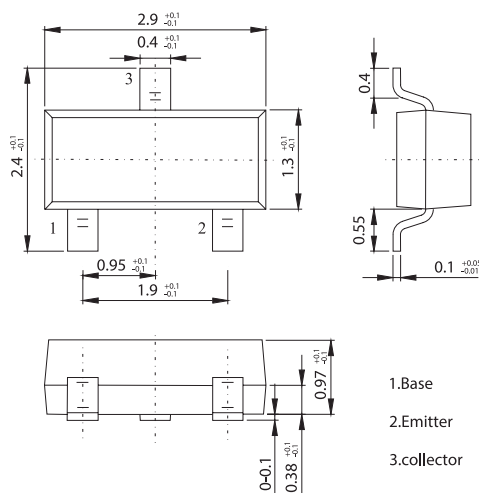
multicom^{PRO}

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Typical Characteristics



Diagram



Part Number Table

Description	Part Number
Single Bipolar Transistor, NPN, 0.5A, 300V, SOT 23	MMbTA42

Dimensions : Millimetres

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