

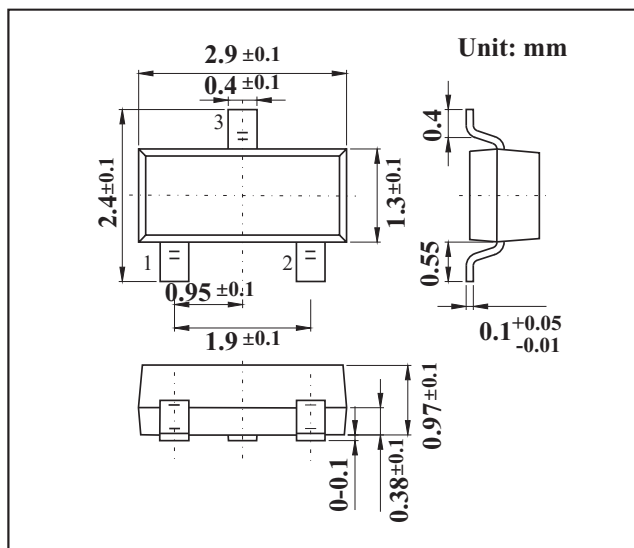
SOT-23 Plastic-Encapsulate Transistors

Features

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary to MMBTA92 (PNP)
- NPN Transistors

MECHANICAL DATA

- Case style: SOT-23 molded plastic
- Mounting position: any



MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	300	V
Collector - Emitter Voltage	V_{CE0}	300	
Emitter - Base Voltage	V_{EB0}	5	
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	350	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{stg}	-55 to 150	

PACKAGE INFORMATION

Device	Package	Shipping
MMBTA42	SOT-23	3000/Tape&Reel

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V_{CB0}	$I_C = 100 \mu A, I_E = 0$	300			V
Collector-emitter breakdown voltage	V_{CE0}	$I_C = 1 mA, I_B = 0$	300			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu A, I_C = 0$	5			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 200 V, I_E = 0$			0.1	uA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5 V, I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20 mA, I_B = 2 mA$			0.2	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 20 mA, I_B = 2 mA$			0.9	
DC current gain	$h_{fe} (1)$	$V_{CE} = 10 V, I_C = 1 mA$	60			
	$h_{fe} (2)$	$V_{CE} = 10 V, I_C = 10 mA$	100		300	
	$h_{fe} (3)$	$V_{CE} = 10 V, I_C = 30 mA$	60			
Transition frequency	f_T	$V_{CE} = 20 V, I_C = 10 mA, f = 30 MHz$	50			MHz

Classification of $h_{fe}(2)$

Type	MMBTA42	MMBTA42-L
Range	100-300	100-200
Marking	1D	

RATINGS AND CHARACTERISTIC CURVES

■ Typical Characteristics

