

MMBTA42, MMBTA43

NPN Silicon Epitaxial Planar Transistors

especially suited as line switch in telephone subsets and in video output stages of TV receivers and monitors.

As complementary types, the PNP transistors MMBTA92 and MMBTA93 are recommended.

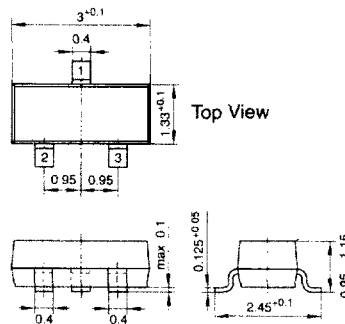
Pin Configuration

1 = Collector, 2 = Base, 3 = Emitter

Marking Code

MMBTA42 = 1D

MMBTA43 = 1E



SOT-23 Plastic Package

Weight approx. 0.008 g

Dimensions in mm

Absolute Maximum Ratings

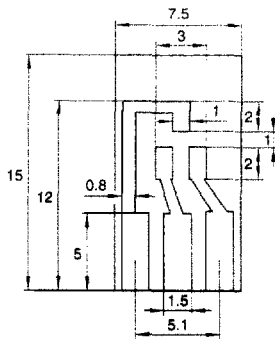
		Symbol	Value	Unit
Collector-Emitter Voltage	MMBTA42	V_{CEO}	300	V
	MMBTA43	V_{CEO}	200	V
Collector-Base Voltage	MMBTA42	V_{CBO}	300	V
	MMBTA43	V_{CBO}	200	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current		I_C	500	mA
Power Dissipation ¹⁾ at $T_{SB} = 50\text{ °C}$		P_{tot}	300 ¹⁾	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_S	-65...+150	°C

¹⁾ Device on fiberglass substrate, see layout

Characteristics at $T_{amb} = 25\text{ }^{\circ}\text{C}$

	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Breakdown Voltage $I_C = 10\text{ mA}$, $I_B = 0$	MMBTA42 $V_{(BR)CEO}$	300	-	-	V
	MMBTA43 $V_{(BR)CEO}$	200	-	-	V
Collector-Base Breakdown Voltage $I_C = 100\text{ }\mu\text{A}$, $I_E = 0$	MMBTA42 $V_{(BR)CBO}$	300	-	-	V
	MMBTA43 $V_{(BR)CBO}$	200	-	-	V
Emitter-Base Breakdown Voltage $I_E = 100\text{ }\mu\text{A}$, $I_C = 0$	$V_{(BR)EBO}$	6	-	-	V
Collector-Base Cutoff Current $V_{CB} = 200\text{ V}$, $I_E = 0$ $V_{CB} = 160\text{ V}$, $I_E = 0$	MMBTA42 I_{CBO}	-	-	100	nA
	MMBTA43 I_{CBO}	-	-	100	nA
Emitter-Base Cutoff Current $V_{EB} = 6\text{ V}$, $I_C = 0$ $V_{EB} = 4\text{ V}$, $I_C = 0$	MMBTA42 I_{EBO}	-	-	100	nA
	MMBTA43 I_{EBO}	-	-	100	nA
DC Current Gain $I_C = 1\text{ mA}$, $V_{CE} = 10\text{ V}$ $I_C = 10\text{ mA}$, $V_{CE} = 10\text{ V}$ $I_C = 30\text{ mA}$, $V_{CE} = 10\text{ V}$	h_{FE}	25	-	-	-
	h_{FE}	40	-	-	-
	h_{FE}	40	-	-	-
Collector-Emitter Saturation Voltage $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$	V_{CEsat}	-	-	500	mV
Base-Emitter Saturation Voltage $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$	V_{BEsat}	-	-	900	mV
Gain-Bandwidth Product $I_E = 10\text{ mA}$, $V_{CE} = 20\text{ V}$, $f = 100\text{ MHz}$	f_T	50	-	-	MHz
Collector-Base Capacitance $V_{CB} = 20\text{ V}$, $I_E = 0$, $f = 1\text{ MHz}$	MMBTA42 C_{CBO}	-	-	3	pF
	MMBTA43 C_{CBO}	-	-	4	pF
Thermal Resistance Junction to Ambient Air	R_{thA}	-	-	430 ¹⁾	K/W

¹⁾ Device on fiberglass substrate, see layout

Layout for R_{thA} test

Thickness: Fiberglass 1.5 mm

Copper leads 0.3 mm