

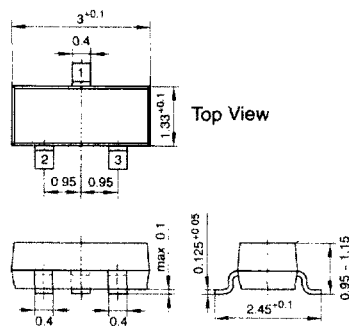
MMBTA42, MMBTA43

NPN Silicon Epitaxial Planar Transistors
especially suited as line switch in telephone subsets
and in video output stages of TV receivers and moni-
tors.

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

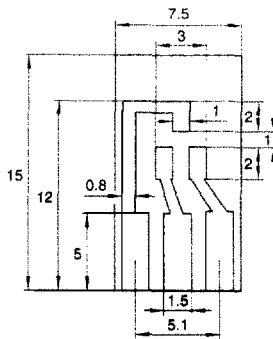
Absolute Maximum Ratings

		Symbol	Value	Unit
Collector-Emitter Voltage	MMBTA42	V_{CE0}	300	V
	MMBTA43	V_{CE0}	200	V
Collector-Base Voltage	MMBTA42	V_{CB0}	300	V
	MMBTA43	V_{CB0}	200	V
Emitter-Base Voltage		V_{EB0}	6	V
Collector Current		I_C	500	mA
Power Dissipation ¹⁾ at $T_{SB} = 50\text{ }^{\circ}\text{C}$		P_{tot}	300 ¹⁾	mW
Junction Temperature		T_j	150	$^{\circ}\text{C}$
Storage Temperature Range		T_S	-65...+150	$^{\circ}\text{C}$
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 MMBTA42 $I_C = 10\text{ mA}, I_E = 0$ MMBTA43	$V_{(BR)CEO}$	300	–	–	V
	$V_{(BR)CEO}$	200	–	–	V
Collector-Base Breakdown Voltage MMBTA42 $I_C = 100\text{ }\mu\text{A}, I_E = 0$ MMBTA43	$V_{(BR)CBO}$	300	–	–	V
	$V_{(BR)CBO}$	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 $V_{CB} = 200\text{ V}, I_E = 0$ MMBTA42 $V_{CB} = 160\text{ V}, I_E = 0$ MMBTA43	I_{CBO}	–	–	100	nA
	I_{CBO}	–	–	100	nA
Emitter-Base Cutoff Current $V_{EB} = 6\text{ V}, I_C = 0$ MMBTA42 $V_{EB} = 4\text{ V}, I_C = 0$ MMBTA43	I_{EBO}	–	–	100	nA
	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 $I_C = 20\text{ mA}, I_E = 2\text{ mA}$	V_{CEsat}	–	–	500	mV
Base-Emitter Saturation Voltage $I_C = 20\text{ mA}, I_E = 2\text{ mA}$	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 MMBTA42 $V_{CB} = 20\text{ V}, I_E = 0, f = 1\text{ MHz}$ MMBTA43	C_{CBO}	–	–	3	pF
	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