MBTA42

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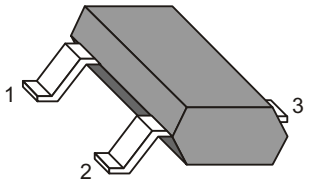
SILICON EPITAXIAL TRANSISTORS

N-P-N TRANSISTORS



1. BASE
3. EMITTER
2. COLLECTOR

Type	SOT-23
Color Code	Black
Marking	MBTA42

■ ABSOLUTE MAXIMUM RATINGS

Descriptions	Symbol	Min.	Typ.	Max.	Unit
Storage Temperature	T_{stg}	-55	-	150	℃
Junction Temperature	T_j	-	-	150	℃
Maximum Power Dissipation (Ta=25℃)	P_{tot}	-	-	250	mW
Maximum Collector to Base Voltage	V_{CBO}	-	-	300	V
Maximum Collector to Emitter Voltage	V_{CEO}	-	-	300	V
Maximum Emitter to Base Voltage	V_{EBO}	-	-	6	V
Maximum Collector Current (d.c.)	I_C	-	-	500	mA

■ ELECTRICAL CHARACTERISTICS (Ta=25℃)

Descriptions	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	V_{CE}=10V, I_C=1mA	h_{FE1}	25	-	-	-
	V_{CE}=10V, I_C=10mA	h_{FE2}	40	-	-	-
	V_{CE}=10V, I_C=30mA	h_{FE3}	40	-	-	-
Gain Bandwidth product	V_{CE}=20V, I_C=10mA	f_T	50	-	-	MHz
Feedback Capacitance	V_{CB}=20V, I_E=0, I_e = mA, f=1MHz	C_{re}	-	-	-	$_P$F
Collector Cut-off Current	V_{CB}= 200V, I_E=0mA	I_{CBO}	-	-	0.1	uA
Emitter Cut-off Current	V_{EB}=6V, I_C=0	I_{EBO}	-	-	0.1	uA
Collector Saturation Voltage	I_C= 20mA, I_E=2mA	$V_{CE(Sat)}$	-	-	0.5	V
Base Saturation Voltage	I_C= 20mA, I_B=2mA	$V_{BE(Sat)}$	-	-	0.9	V
Collector to Base Breakdown Voltage	I_C= 100uA, I_E=0	BV_{CBO}	300	-	-	V
Collector to Emitter Breakdown Voltage	I_C= 1mA, I_B=0	BV_{CEO}	300	-	-	V
Emitter to Base Breakdown Voltage	I_C= 0mA, I_E=100uA	BV_{EBO}	6	-	-	V

Pulse Test ≦ 300μS, Duty Cycle. ≦2%

■ THERMAL CHARACTERISTICS

Descriptions	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance at $T_j = P(R_{th\ j\text{-}t}+R_{th\ t\text{-}s}+R_{th\ s\text{-}a}) + T_{amb}$	$R_{th\ j\text{-}a}$	-	500	-	K/W

P / N	MBTA42
Marking	1D

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