



SOT-23 Plastic-Encapsulate Transistors

MMBTA42 TRANSISTOR (NPN)

FEATURES

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

Marking: 1D

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	300	V
V _{CEO}	Collector-Emitter Voltage	300	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current -Continuous	0.3	A
P _C	Collector Power dissipation	0.35	W
R _{θJA}	Thermal Resistance, junction to Ambient	357	°C/mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55to +150	°C



ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 100μA, I _E =0	300		V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1mA, I _B =0	300		V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 100μA, I _C =0	5		V
Collector cut-off current	I _{CB0}	V _{CB} =200V, I _E =0		0.25	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 5V, I _C =0		0.1	μA
DC current gain	h _{FE(1)}	V _{CE} = 10V, I _C = 1mA	60		
	h _{FE(2)}	V _{CE} = 10V, I _C =10mA	100	200	
	h _{FE(3)}	V _{CE} =10V, I _C =30mA	60		
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =20mA, I _B = 2mA		0.2	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C = 20mA, I _B =2mA		0.9	V
Transition frequency	f _T	V _{CE} = 20V, I _C = 10mA, f=30MHz	50		MHz