

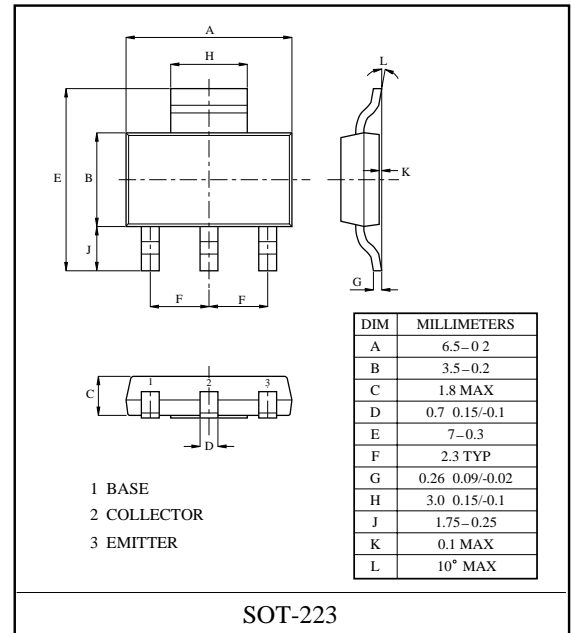
MMBTA42S TRANSISTOR (NPN)

FEATURES

- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary type: MMBTA92S (PNP)

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	300	V
V _{CEO}	Collector-Emitter Voltage	300	V
V _{EBO}	Emitter-Base Voltage	6	V
I _c	Collector Current -Continuous	0.5	A
P _c	Collector Power Dissipation	1	W
T _j	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~150	°C



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	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	6			V
Collector cut-off current	I _{CBO}	V _{CB} =200V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =6V, I _C =0			0.1	μA
DC current gain	h _{FE(1)}	V _{CE} =10V, I _C =1mA	25			
	h _{FE(2)}	V _{CE} =10V, I _C =10mA	40			
	h _{FE(3)}	V _{CE} =10V, I _C =30mA	40			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =20mA, I _B =2mA			0.5	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=100MHz	50			MHz
Collector output capacitance	C _{ob}	V _{CB} =20V, I _E =0, f=1MHz			3	pF

Typical Performance Characteristics

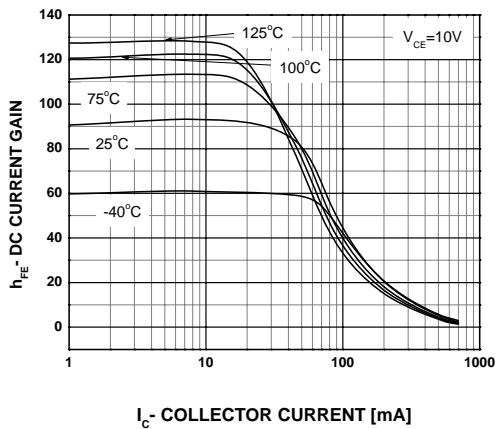


Figure 1. DC Current Gain vs Collector Current

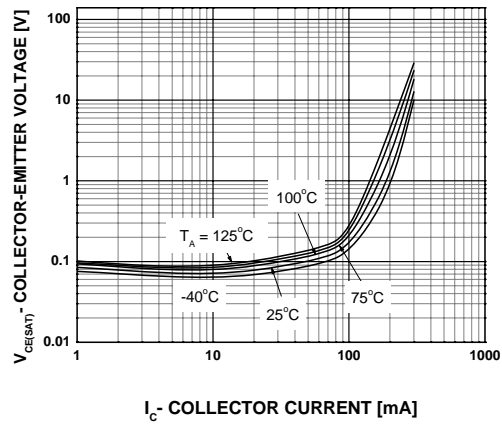


Figure 2. Collector-Emitter Saturation Voltage vs Collector Current

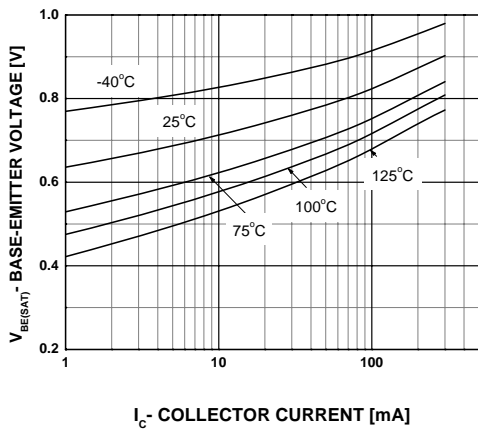


Figure 3. Base-Emitter Saturation Voltage vs Collector Current

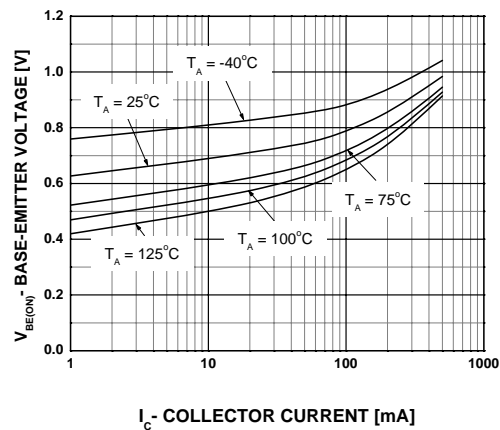


Figure 4. Base-Emitter ON Voltage vs Collector Current

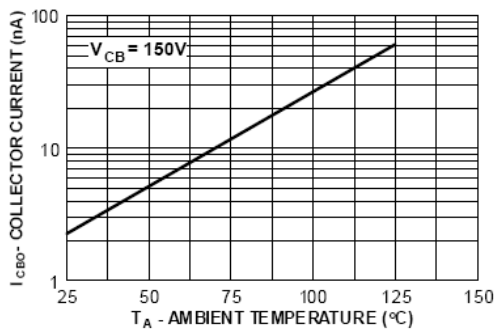


Figure 5. Collector-Cutoff Current vs Ambient Temperature

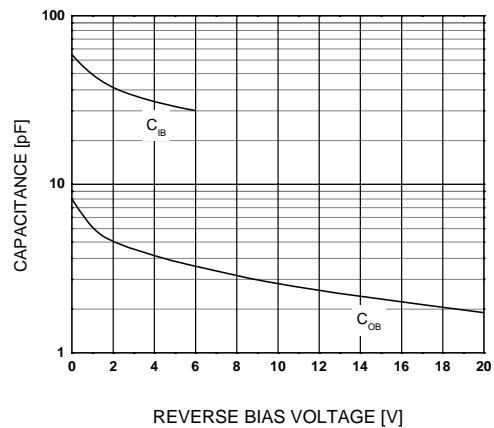


Figure 6. Collector-Base and Emitter-Base Capacitance vs Reverse Bias Voltage