

FEATURES

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

MARKING: 1D

Maximum Ratings (TA=25 °C unless otherwise noted)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V _{CBO}	300	V
Collector-Emitter Voltage	V _{CEO}	300	V
Emitter-Base Voltage	V _{EBO}	5	V
Collector Current -Continuous	I _C	500	mA
Collector Power dissipation	P _C	0.35	W
Thermal Resistance, junction to Ambient	R _{JA}	357	°C/mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55to +150	°C

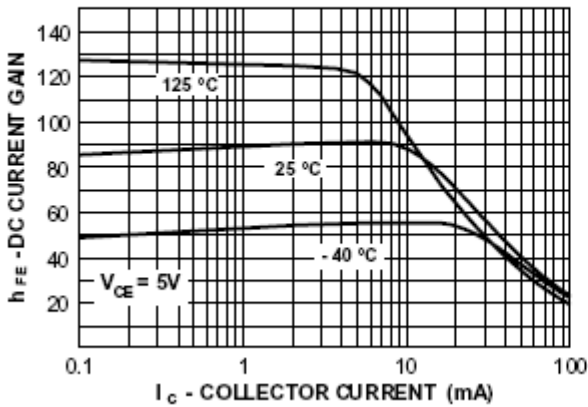
MMBTA42(NPN)


ELECTRICAL CHARACTERISTICS (@ Ta=25 °C unless otherwise specified)

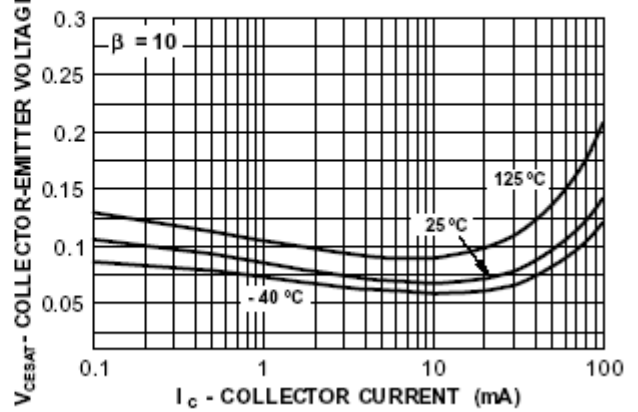
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V _{CBO}	I _C = 100μA, I _E =0	300		V
Collector-emitter breakdown voltage	V _{CEO}	I _C = 1mA, I _B =0	300		V
Emitter-base breakdown voltage	V _{EBO}	I _E = 100μA, I _C =0	5		V
Collector cut-off current	I _{CBO}	V _{CB} =200V, 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

MMBTA42 Typical Characteristics

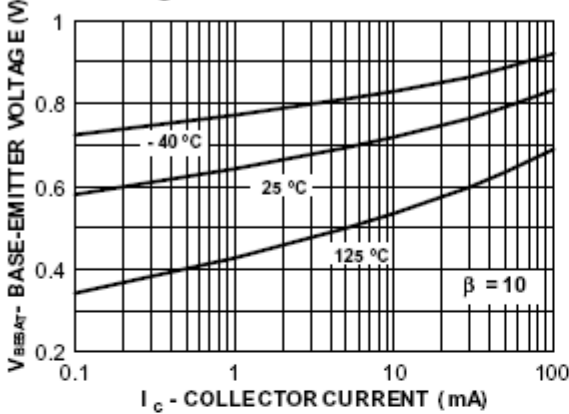
DC Current Gain vs Collector Current



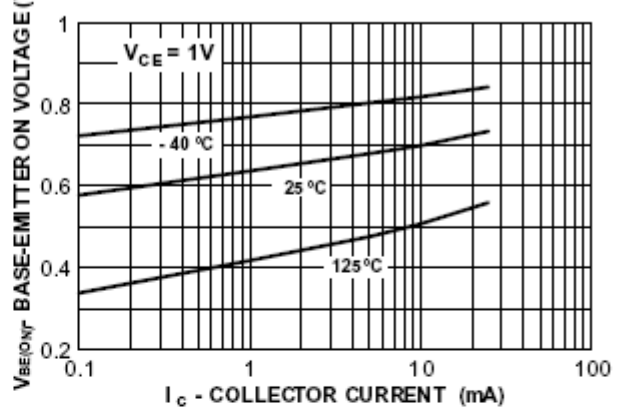
Collector-Emitter Saturation Voltage vs Collector Current



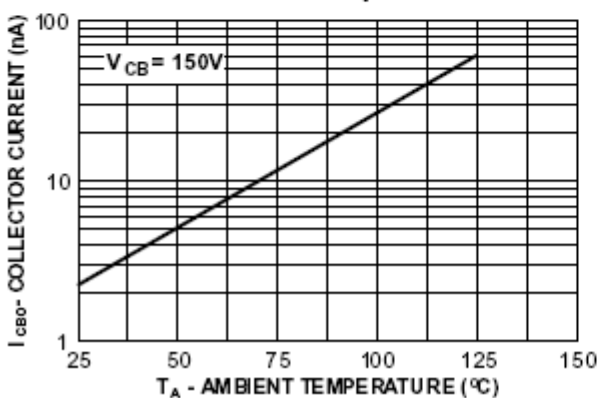
Base-Emitter Saturation Voltage vs Collector Current



Base-Emitter ON Voltage vs Collector Current



Collector-Cutoff Current vs Ambient Temperature



Collector-Base and Emitter-Base Capacitance vs Reverse Bias Voltage

