

**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 <sub>CBO</sub>	300	V
Collector-Emitter Voltage	V <sub>CEO</sub>	300	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current -Continuous	I <sub>C</sub>	0.3	A
Collector Power dissipation	P <sub>C</sub>	0.35	W
Thermal Resistance, junction to Ambient	R <sub>JA</sub>	357	°C/mW
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55to +150	°C

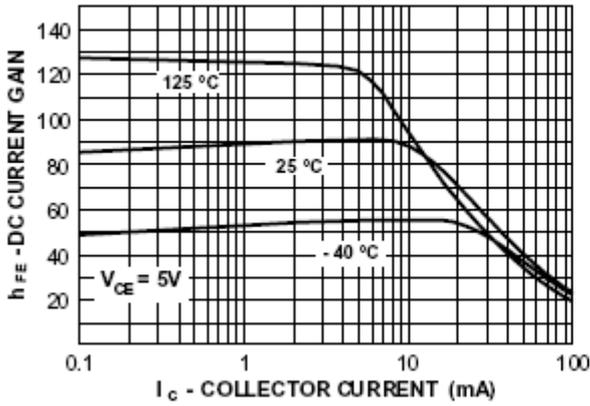
**MMBTA42(NPN)**


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

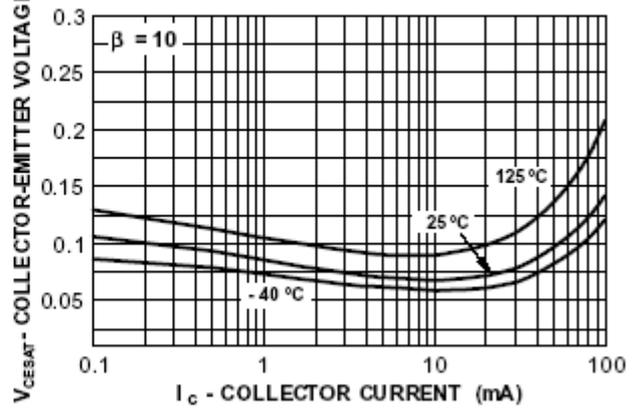
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V <sub>CBO</sub>	I <sub>C</sub> = 100μA, I <sub>E</sub> =0	300		V
Collector-emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = 1mA, I <sub>B</sub> =0	300		V
Emitter-base breakdown voltage	V <sub>EBO</sub>	I <sub>E</sub> = 100μA, I <sub>C</sub> =0	5		V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =200V, I <sub>E</sub> =0		0.25	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 5V, I <sub>C</sub> =0		0.1	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 1mA	60		
	h <sub>FE(2)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> =10mA	100	200	
	h <sub>FE(3)</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =30mA	60		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =20mA, I <sub>B</sub> = 2mA		0.2	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 20mA, I <sub>B</sub> =2mA		0.9	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 20V, I <sub>C</sub> = 10mA, f=30MHz	50		MHz

**MMBTA42** Typical Characteristics

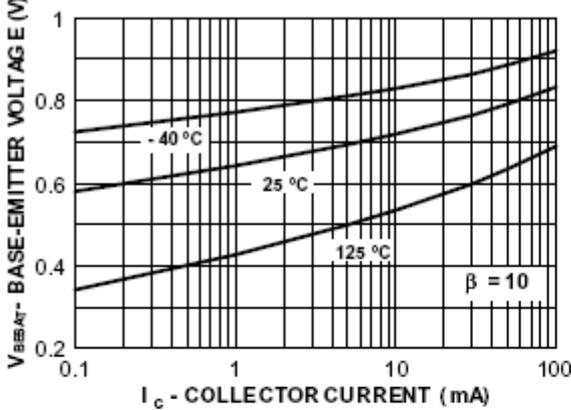
**DC Current Gain vs Collector Current**



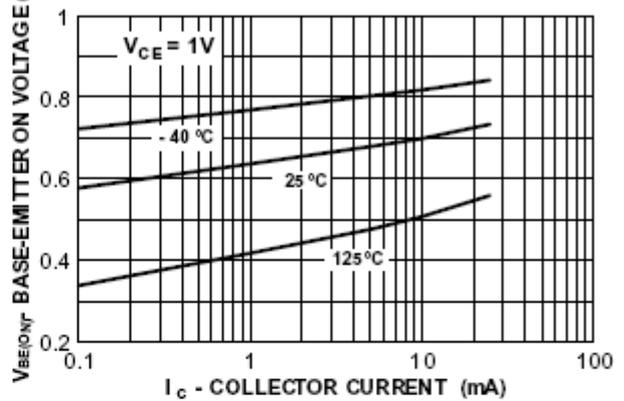
**Collector-Emitter Saturation Voltage vs Collector Current**



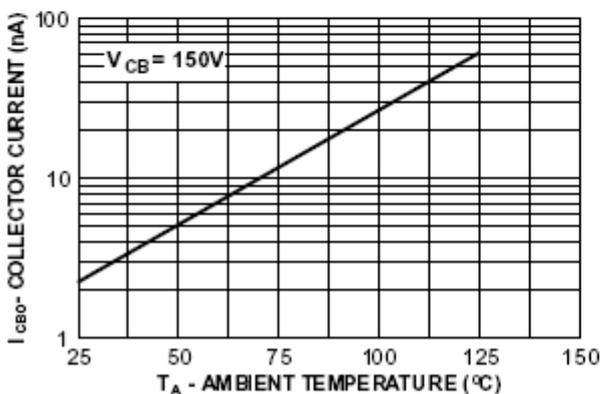
**Base-Emitter Saturation Voltage vs Collector Current**



**Base-Emitter ON Voltage vs Collector Current**



**Collector-Cutoff Current vs Ambient Temperature**



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

