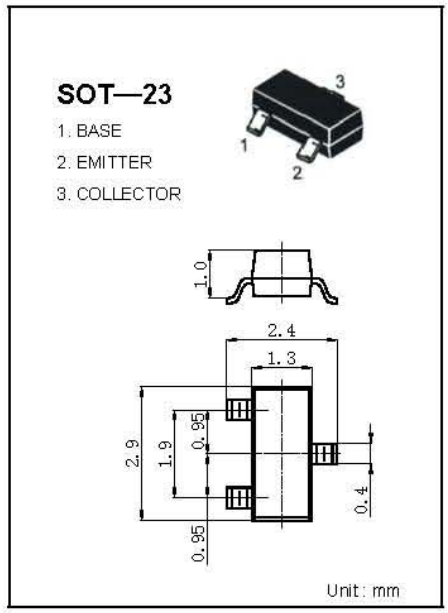
RECTRON
RECTIFIER SPECIALISTS

SOT-23 Plastic-Encapsulate Transistors

MMBTA42LT1 TRANSISTOR（ NPN ）



FEATURES

Power dissipation

P_{CM} : 0.3 W（Tamb=25℃）

Collector current

$I_{CM:}$ 0.3 A

Collector-base voltage

$V_{(BR)CBO}$: 300 V

Operating and storage junction temperature range

T_J, T_{stg}: -55℃ to +150℃

ELECTRICAL CHARACTERISTICS（Tamb=25℃ unless otherwise specified）

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	Ic= 100 μ A, I_E=0	310		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	Ic= 1 mA, I_B=0	305		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E= 100 μ A, I_C=0	5		V
Collector cut-off current	I_{CBO}	V_{CB}=200 V , I_E=0		0.25	μ A
Emitter cut-off current	I_{EBO}	V_{EB}= 5V , I_C=0		0.1	μ A
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=20 mA, I_B= 2mA		0.2	V
Base-emitter saturation voltage	V_{BE}(sat)	I_C= 20 mA, I_B=2mA		0.9	V
Transition frequency	f_T	V_{CE}= 20V, I_C= 10mA f=30MHz	50		MHz

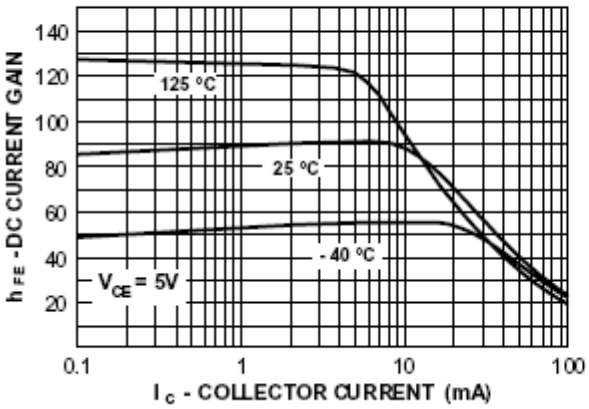
DEVICE MARKING

MMBTA42LT1=1D

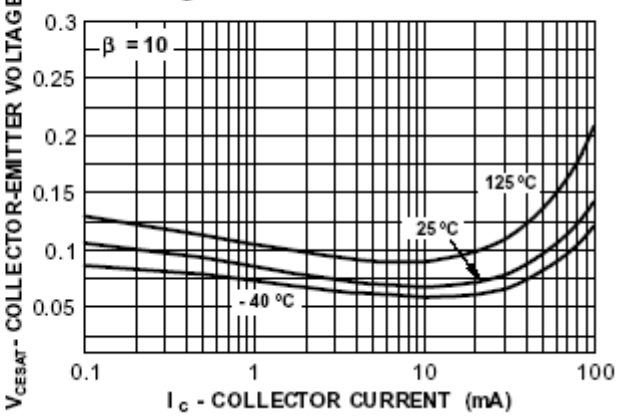
Typical Characteristics

MMBTA42LTI

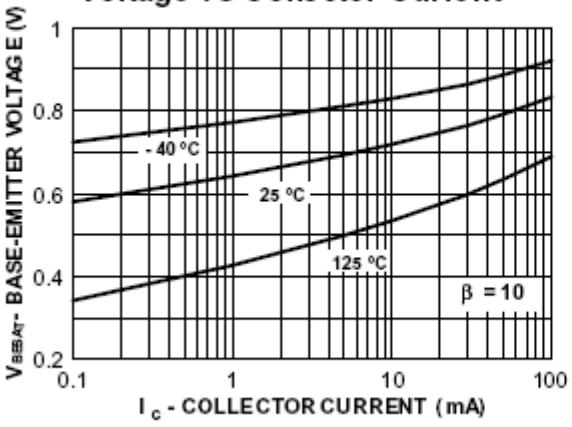
DC Current Gain vs Collector Current



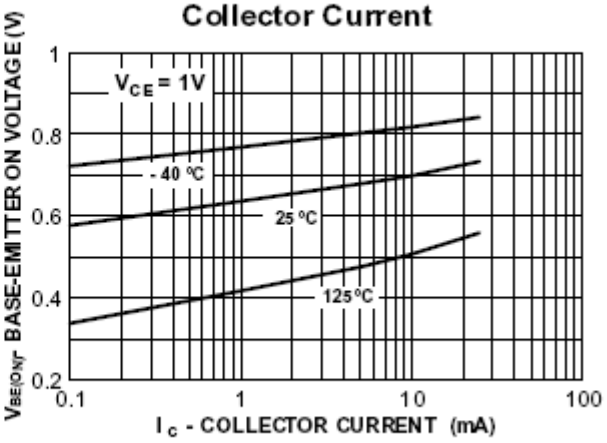
Collector-Emitter Saturation Voltage vs Collector Current



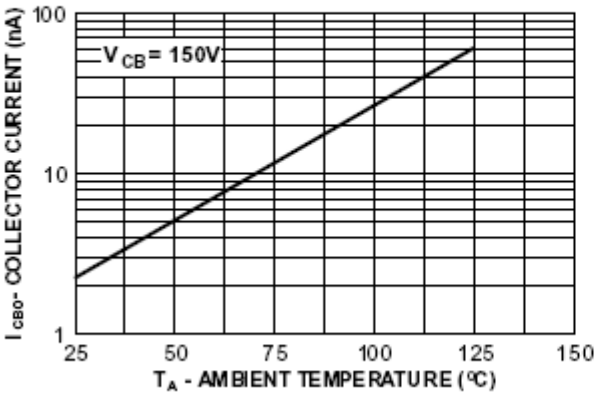
Base-Emitter Saturation Voltage vs Collector Current



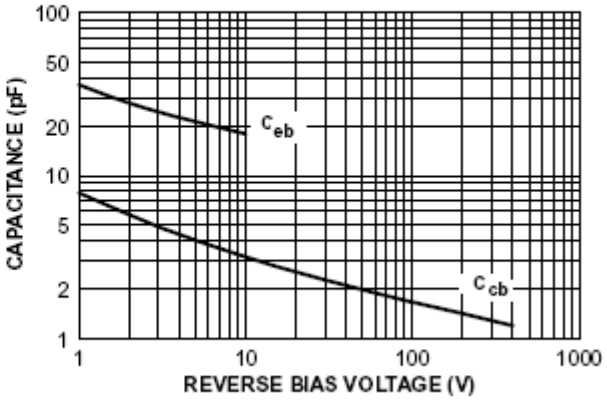
Base-Emitter ON Voltage vs Collector Current

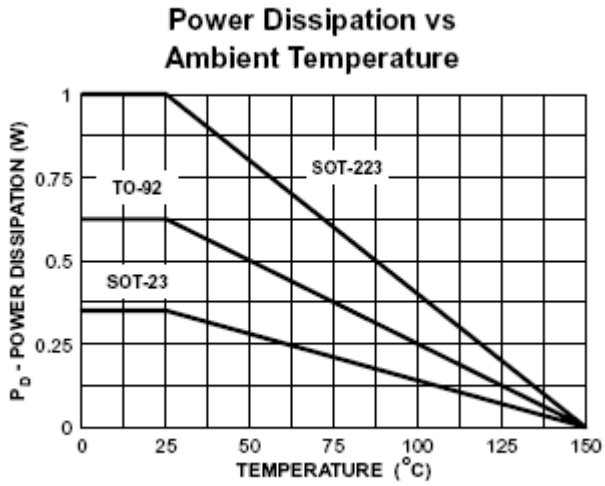


Collector-Cutoff Current vs Ambient Temperature



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




Power Dissipation vs
Ambient Temperature
P_D - POWER DISSIPATION (W)
1
0.75
0.5
0.25
0
TO-92
SOT-223
SOT-23
0
25
50
75
100
125
150
TEMPERATURE (°C)