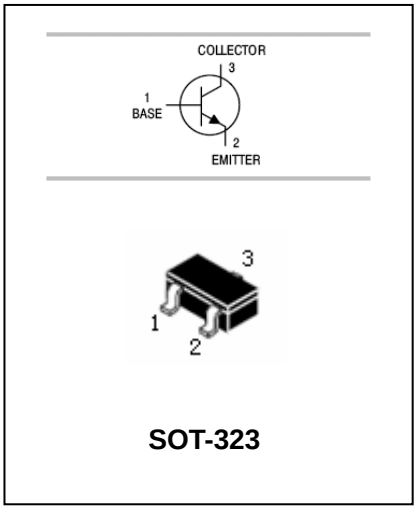
NPN Silicon Epitaxial Planar Transistor **MMSTA42**

FEATURES

Lead-free

- Power dissipation.(P_C=0.35W)



SOT-323

APPLICATIONS

- Audio frequency general purpose amplifier.

ORDERING INFORMATION

Type No.	Marking	Package Code
MMSTA42	K3M	SOT-323

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

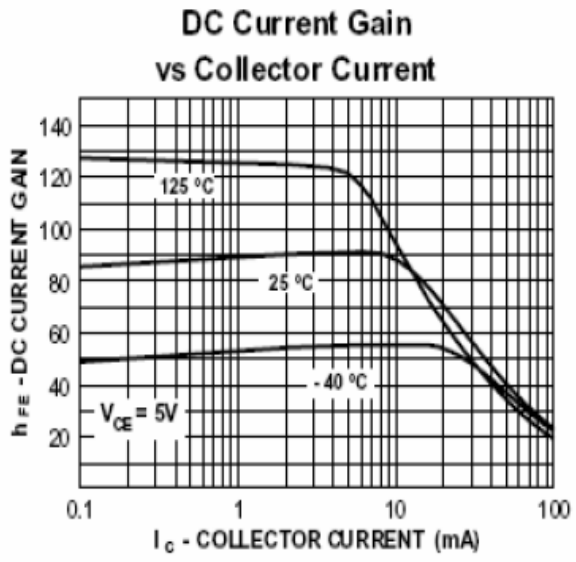
Symbol	**Parameter**	**Value**	**Units**
V_{CBO}	Collector-Base Voltage	310	V
V_{CEO}	Collector-Emitter Voltage	305	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	500	mA
P_C	Collector Dissipation	200	mW
T_j,T_{stg}	Junction and Storage Temperature	-55~150	℃

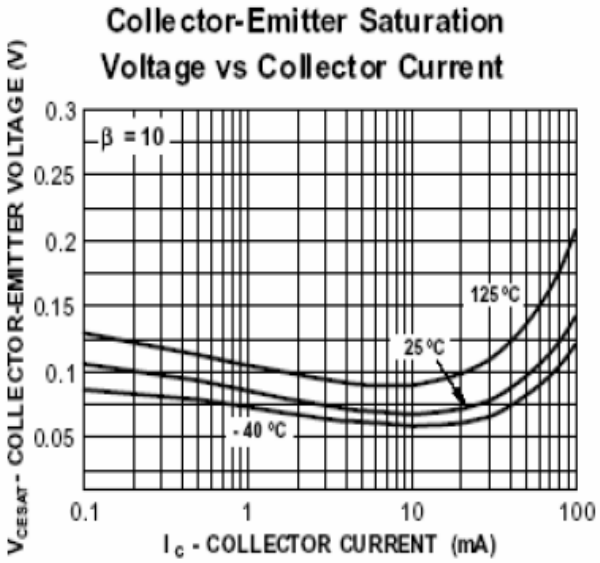
NPN Silicon Epitaxial Planar Transistor **MMSTA42**

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA,I_E=0	310		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	305		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	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}	V_{CE}=10V,I_C=1mA V_{CE}=10V,I_C=10mA V_{CE}=10V,I_C=30mA	60 100 60	200	
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_E= 10mA f=30MHz	50		MHz

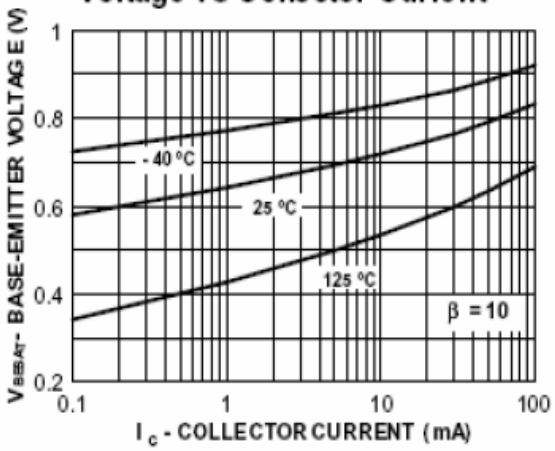
TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified



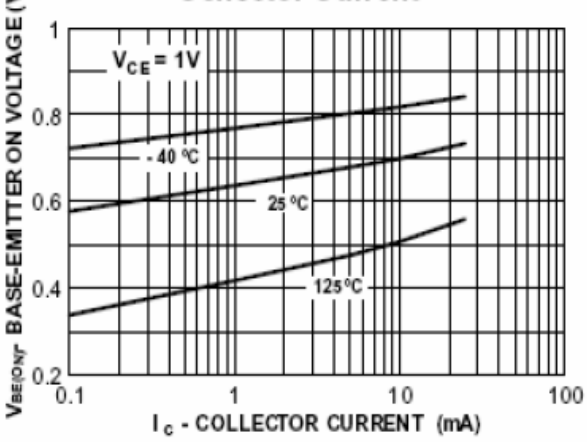


NPN Silicon Epitaxial Planar Transistor **MMSTA42**

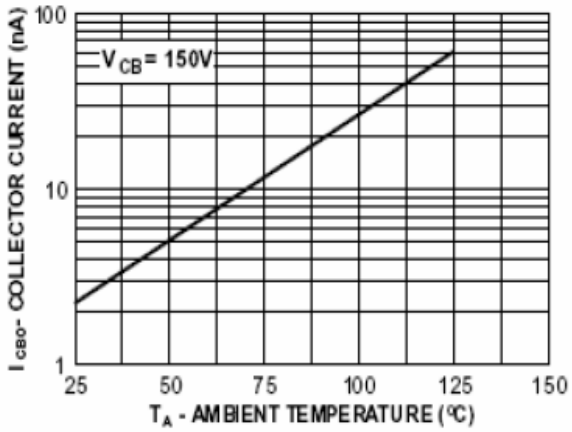
Base-Emitter Saturation Voltage vs Collector Current



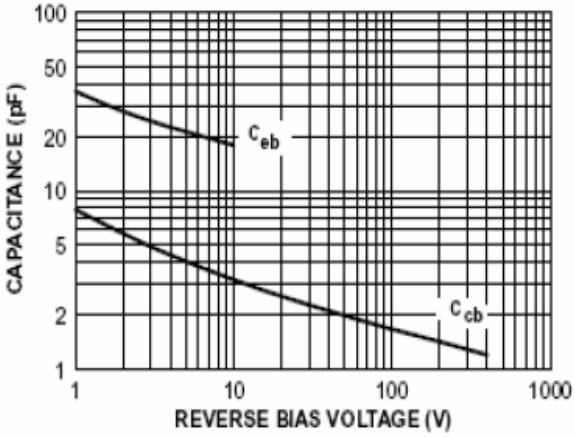
Base-Emitter ON Voltage vs Collector Current



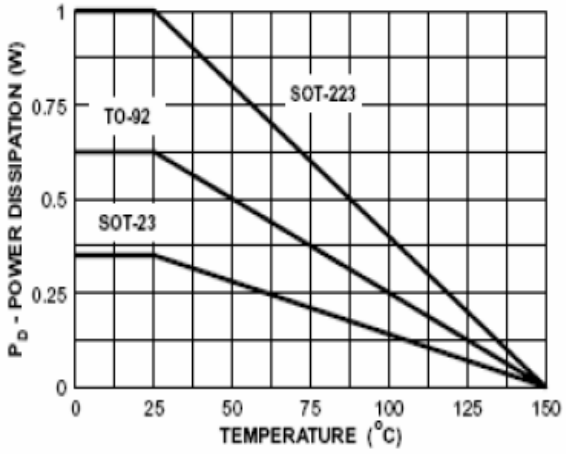
Collector-Cutoff Current vs Ambient Temperature



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



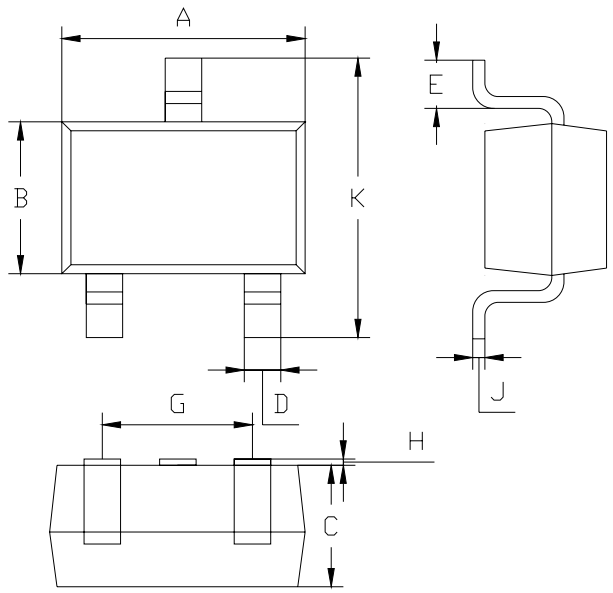
Power Dissipation vs Ambient Temperature



NPN Silicon Epitaxial Planar Transistor **MMSTA42**

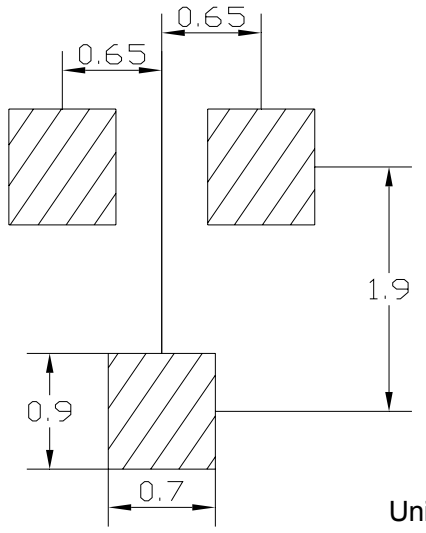
PACKAGE OUTLINE

Plastic surface mounted package SOT-323



SOT-323		
Dim	Min	Max
A	1.8	2.2
B	1.15	1.35
C	1.0Typical	
D	0.15	0.35
E	0.25	0.40
G	1.2	1.4
H	0.02	0.1
J	0.1Typical	
K	2.1	2.3
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

Device	Package	Shipping
MMSTA42	SOT-323	3000/Tape&Reel