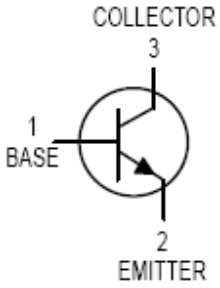
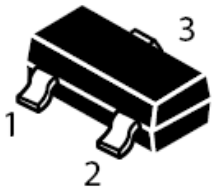
LITE-ON SEMICONDUCTORS

MMSTA42

NPN General Purpose Transistor





FEATURES

- For switching and amplifier applications.
- Complementary PNP Type Available (MMSTA92)

MECHANICAL DATA

- Case: SOT-323 Plastic
- Case material: “Green” molding compound, UL flammability classification 94V-0, (No Br. Sb. Cl)
- Lead Free in RoHS 2002/95/EC Compliant

Maximum Ratings @ T_A = 25℃

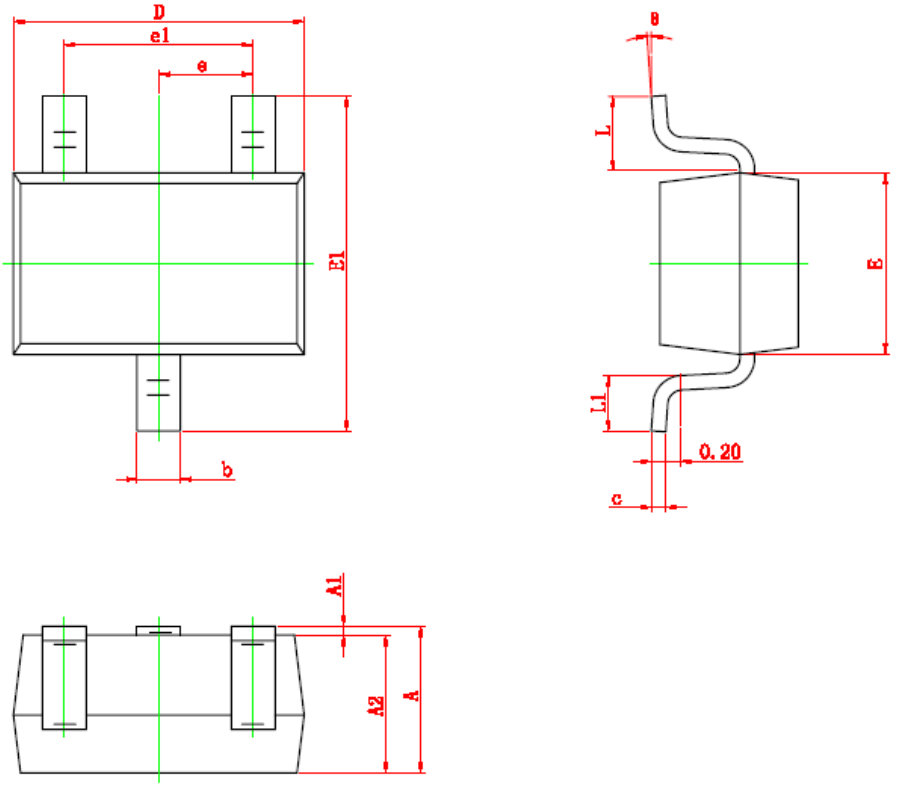
Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current -Continuous	I_C	300	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55~+150	℃

Electrical Characteristics @ T_A = 25℃ unless otherwise specified

Characteristic	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	I_C=100μA,I_E=0	V_{CBO}	300			V
Collector-emitter breakdown voltage	I_C=1mA,I_B=0	V_{CEO}	300			V
Emitter-base breakdown voltage	I_E=100μA,I_C=0	V_{EBO}	5			V
Collector-base cut-off current	V_{CB}=200V,I_E=0	I_{CBO}			0.25	uA
Emitter-base cut-off current	V_{EB}=5V,I_C=0	I_{EBO}			0.1	uA
DC current gain	V_{CE}=10V,I_C=1mA	h_{FE1}	60			
	V_{CE}=10V,I_C=10mA	h_{FE2}	100		200	
	V_{CE}=10V,I_C=30mA	h_{FE3}	75			
Collector-emitter saturation voltage	I_C=20mA,I_B=2mA	V_{CE}(sat)			0.2	V
Base-emitter saturation voltage	I_C=20mA,I_B=2mA	V_{BE}(sat)			0.9	V
Transition frequency	V_{CE}=20V,I_C=10mA, f=30MHz	f_T	50			MHz

REV.2, Jun-2012, KSNR19

SOT-323 Outline Dimension



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Device Marking :

Device P/N	Marking code
MMSTA42	K3M

Electrical characteristic curves

Fig.1 DC Current Gain vs Collector Current

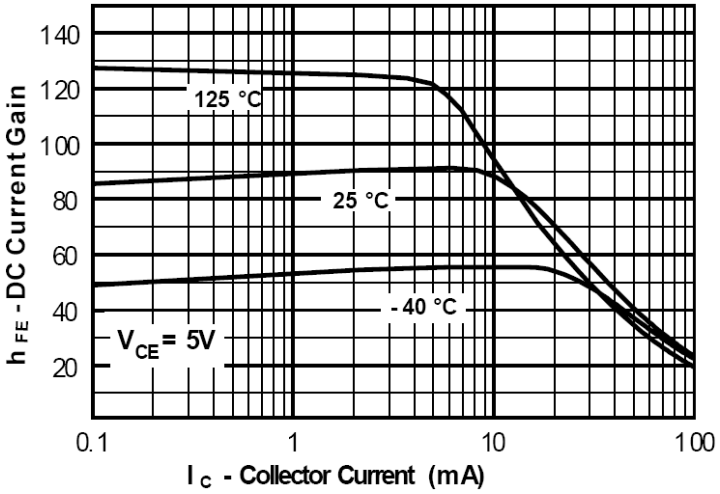


Fig.2 Collector-Emitter Saturation Voltage vs Collector Current

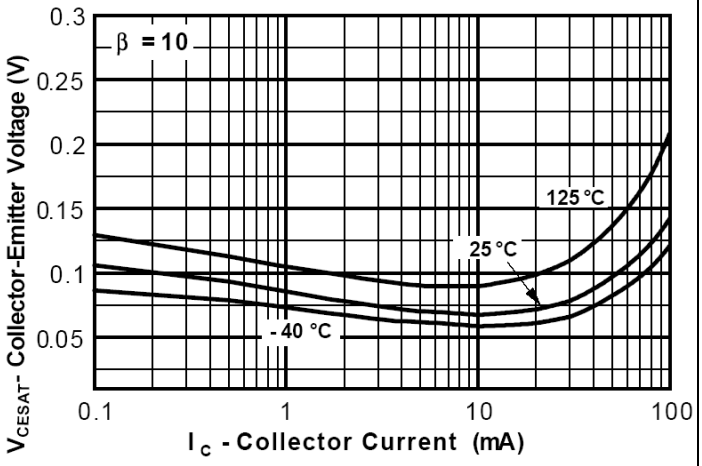


Fig.3 Base-Emitter Saturation Voltage vs Collector Current

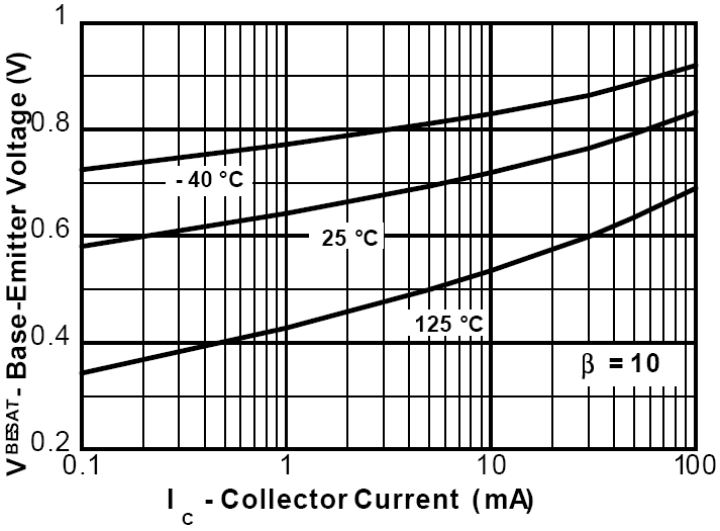


Fig.4 Base-Emitter ON Voltage vs Collector Current

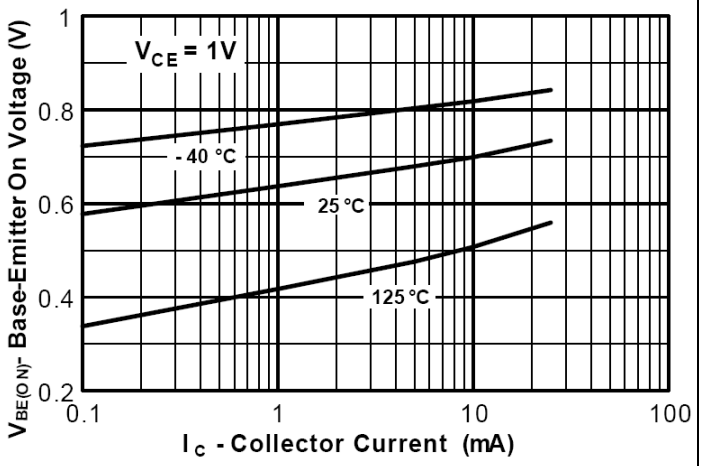


Fig.5 Collector-Cutoff Current vs Ambient Temperature

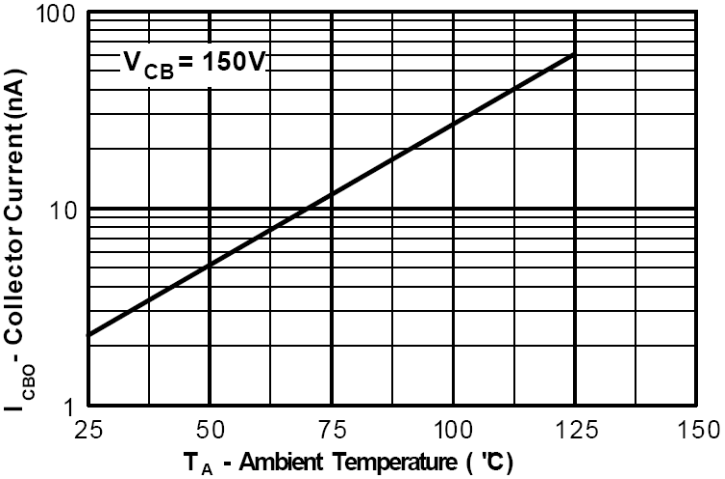


Fig.6 Collector-Base and Emitter-Base Capacitance vs Reverse Bias Voltage

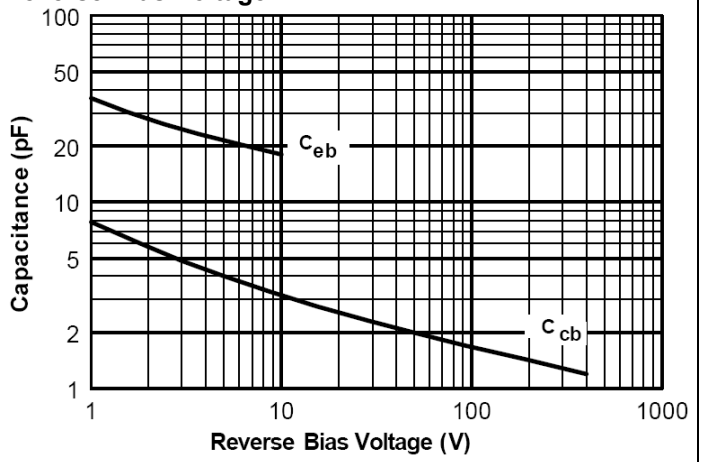
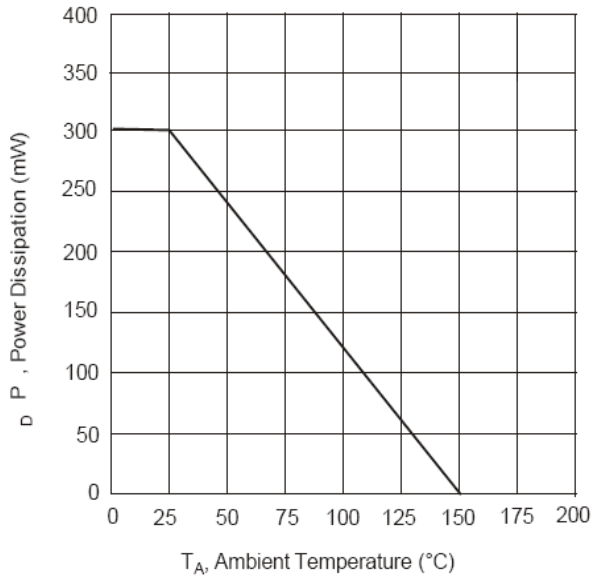


Fig.7 Power Dissipation vs Ambient Temperature



Important Notice and Disclaimer

LSC reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

LSC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does LSC assume any liability for application assistance or customer product design. LSC does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of LSC.

LSC products are not authorized for use as critical components in life support devices or systems without express written approval of LSC.