



THE DATASHEET OF MMSTA42-TP





MMSTA42

NPN Small Signal Transistors

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epitaxial Planar Die Construction
- Ideal for Medium Power Amplification and Switching
- Ultra-small surface mount package
- Marking : K3M
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

- Maximum Thermal Resistance: 625°C/W Junction To Ambient

Symbol	Rating	Rating	Unit
V _{CEO}	Collector-Emitter Voltage	300	V
V _{CBO}	Collector-Base Voltage	300	V
V _{EBO}	Emitter-Base Voltage	6.0	V
I _C	Collector Current-Continuous ^{(1) (3)}	200	mA
P _C	Power dissipation ⁽¹⁾	200	mW
T _J	Junction Temperature	-55 to +150	°C
T _{STG}	Storage Temperature	-55 to +150	°C

Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Max	Units
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OFF CHARACTERISTICS

V _{(BR)CEO}	Collector-Emitter Breakdown Voltage (I _C =1.0mA, I _B =0)	300	---	Vdc
V _{(BR)CBO}	Collector-Base Breakdown Voltage (I _C =100uA, I _E =0)	300	---	Vdc
V _{(BR)EBO}	Collector-Emitter Breakdown Voltage (I _E =100uA, I _C =0)	6.0	---	Vdc
I _{CBO}	Collector-Base Cutoff Current (V _{CB} =200V, I _E =0)	---	100	nA
I _{EBO}	Emitter-Base Cutoff Current (V _{CE} =6.0V, I _C =0)	---	100	nA

ON CHARACTERISTICS⁽²⁾

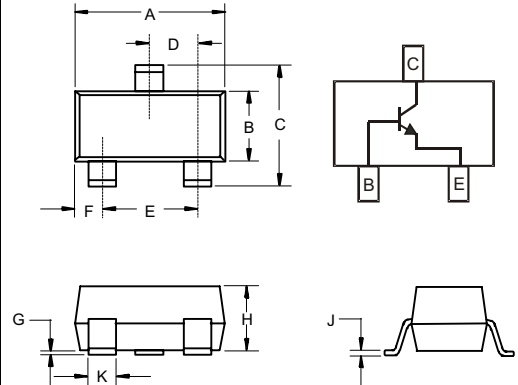
h _{FE}	DC Current Gain (I _C =1.0mA, V _{CE} =10Vdc) (I _C =10mA, V _{CE} =10Vdc) (I _C =30mA, V _{CE} =10Vdc)	25 40 40	---	---
V _{CE(sat)}	Collector-Emitter Saturation Voltage (I _C =20mA, I _B =2.0mA)	---	0.5	Vdc
V _{BE(sat)}	Base-Emitter Saturation Voltage (I _C =20mA, I _B =2.0mA)	---	0.9	Vdc

SMALL SIGNAL CHARACTERISTICS

f _T	Current-Gain-Bandwidth Product (V _{CE} =20V, f=100MHz, I _C =10mA)	50	---	MHz
C _{CB}	Collector-Base Capacitance (V _{CB} =20V, f=1.0MHz, I _E =0)	---	3.0	pF

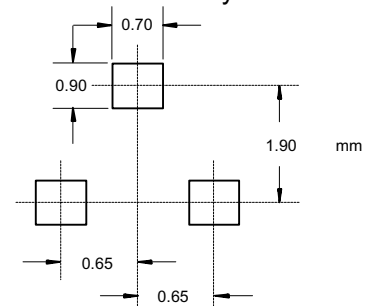
Note: 1. Valid provided that terminals are kept at ambient temperature.
2. Pulse test: Pulse width<300us, duty cycle<2%
3. When operated within safe operating area constraints.

SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

Suggested Solder Pad Layout



Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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