



Micro Commercial Components



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20736 Marilla Street Chatsworth
CA 91311

Phone: (818) 701-4933

Fax: (818) 701-4939

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

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 ($I_C=1.0\text{mA}$, $I_B=0$)	300	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu\text{A}$, $I_E=0$)	300	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage ($I_E=100\mu\text{A}$, $I_C=0$)	6.0	---	Vdc
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=200\text{Vdc}$, $I_E=0$)	---	100	nAdc
I_{EBO}	Emitter-Base Cutoff Current ($V_{CE}=6.0\text{Vdc}$, $I_C=0$)	---	100	nAdc

ON CHARACTERISTICS⁽²⁾

h_{FE}	DC Current Gain ($I_C=1.0\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=10\text{mA}$, $V_{CE}=10\text{Vdc}$) ($I_C=30\text{mA}$, $V_{CE}=10\text{Vdc}$)	25 40 40	---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=20\text{mA}$, $I_B=2.0\text{mA}$)	---	0.5	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ($I_C=20\text{mA}$, $I_B=2.0\text{mA}$)	---	0.9	Vdc

SMALL SIGNAL CHARACTERISTICS

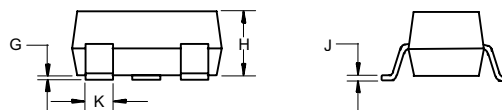
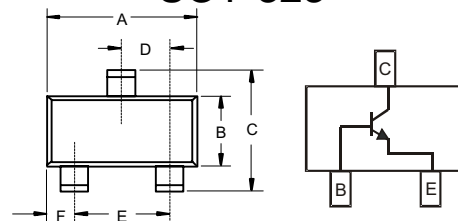
f_T	Current-Gain-Bandwidth Product ($V_{CE}=20\text{V}$, $f=100\text{MHz}$, $I_C=10\text{mA}$)	50	---	MHz
C_{CB}	Collector-Base Capacitance ($V_{CB}=20\text{V}$, $f=1.0\text{MHz}$, $I_E=0$)	---	3.0	pF

Note: 1. Valid provided that terminals are kept at ambient temperature.

2. Pulse test: Pulse width<300us, duty cycle<2%

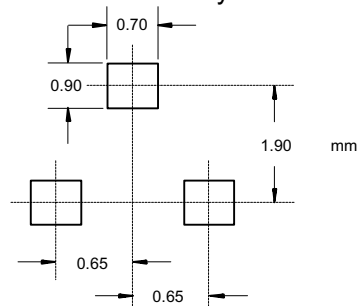
3. When operated within safe operating area constraints.

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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