



Micro Commercial Components

Micro Commercial Components  
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# MMST2222A

## NPN Plastic-Encapsulate Transistors

### Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Power Dissipation: 0.2W
- Ultra-small surface mount package
- Marking: K3P
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

Symbol	Rating	Rating	Unit
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{CBO}$	Collector-Base Voltage	75	V
$V_{EBO}$	Emitter-Base Voltage	6.0	V
$I_{CBO}$	Collector Cut-off Current ( $V_{CB}=70V, I_E=0$ )	100	mA
$I_{CEO}$	Collector Cut-off Current ( $V_{CE}=35V, I_B=0$ )	100	mA
$I_{EBO}$	Emitter Cut-off Current ( $V_{EB}=3V, I_C=0$ )	100	mA
$P_C$	Power dissipation <sup>(1)</sup>	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

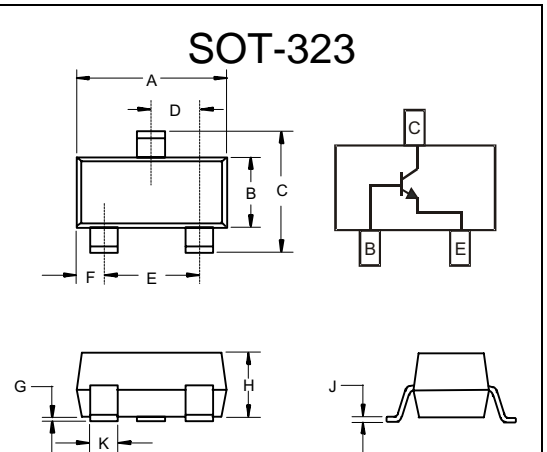
Symbol	Parameter	Min	Max	Units
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#### OFF CHARACTERISTICS <sup>(2)</sup>

$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=1.0mA, I_B=0$ )	40	---	Vdc
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=10mA, I_E=0$ )	75	---	Vdc
$V_{(BR)EBO}$	Collector-Emitter Breakdown Voltage ( $I_E=10uA, I_C=0$ )	6.0	---	Vdc

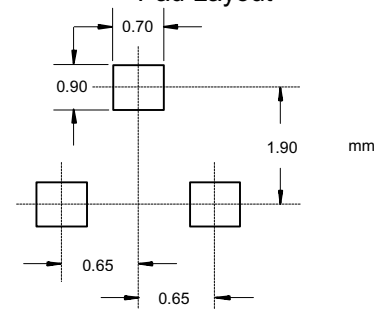
#### ON CHARACTERISTICS <sup>(2)</sup>

$h_{FE}$	DC Current Gain ( $I_C=150mA, V_{CE}=10Vdc$ ) ( $I_C=1.0mA, V_{CE}=10Vdc$ )	100 50	300 ---	---
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ( $I_C=500mA, I_B=50mA$ )	---	0.6	Vdc
$V_{BE(sat)}$	Base-Emitter Saturation Voltage ( $I_C=500mA, I_B=50mA$ )	---	1.2	Vdc
$f_T$	Transition Frequency ( $V_{CE}=20V, I_C=20mA, f=100MHz$ )	300	---	Hz
$C_{ob}$	Output Capacitance ( $V_{CB}=10V, I_E=0mA, f=1MHz$ )	---	8	pF
$t_d$	Delay Time ( $V_{CC}=30V, I_{oc}=150mA, V_{BE(off)}=0.5V, I_{B1}=15mA$ )	---	10	ns
$t_r$	Rise Time ( $V_{CC}=30V, I_{oc}=150mA, V_{BE(off)}=0.5V, I_{B1}=15mA$ )	---	25	ns
$t_s$	Storage Time ( $V_{CC}=30V, I_{oc}=150mA, I_{B1}=I_{B2}=15mA$ )	---	225	ns
$t_f$	Fall Time ( $V_{CC}=30V, I_{oc}=150mA, I_{B1}=I_{B2}=15mA$ )	---	60	ns



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.079	.087	2.00	2.20	
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	.012	.016	.30	.40	

#### Suggested Solder Pad Layout





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### 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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