

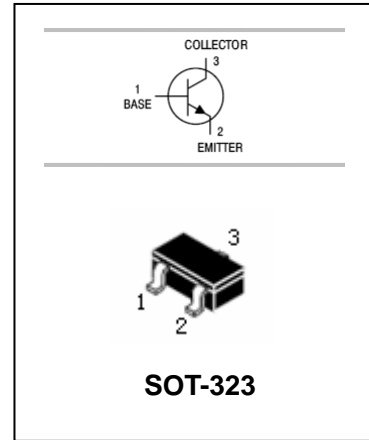


## Silicon Epitaxial Planar Transistor

## MMST2222A

### FEATURES

- Epitaxial planar die construction.
- Complements the MMST2907A.
- Ultra-small surface mount package.



### APPLICATIONS

- NPN Silicon Epitaxial Planar Transistor.

### ORDERING INFORMATION

Type No.	Marking	Package Code
MMST2222A	K3P	SOT-323

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

Symbol	Parameter	Value	Units
V <sub>CBO</sub>	Collector-Base Voltage	75	V
V <sub>CEO</sub>	Collector-Emitter Voltage	40	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>C</sub>	Collector Current -Continuous	600	mA
P <sub>C</sub>	Collector Dissipation	200	mW
R <sub>θJA</sub>	Thermal resistance, junction to ambient	625	°C/W
T <sub>J</sub> , T <sub>stg</sub>	Junction and Storage Temperature	-55 to +150	°C



**Silicon Epitaxial Planar Transistor**

**MMST2222A**

**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	75			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=60V, I_E=0$ $V_{CB}=60V, I_E=0, T_A=150^\circ C$			10	nA $\mu A$
Collector cut-off current	$I_{CEX}$	$V_{CE}=60V, V_{EB(OFF)}=3.0V$			10	nA
Base cut-off current	$I_{BL}$	$V_{CE}=60V, V_{EB(OFF)}=3.0V$			20	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=3.0V, I_C=0$			10	nA
DC current gain	$h_{FE}$	$V_{CE}=10V, I_C=0.1mA$	35		300	
		$V_{CE}=10V, I_C=1mA$	50			
		$V_{CE}=10V, I_C=10mA$	75			
		$V_{CE}=10V, I_C=150mA$	100			
		$V_{CE}=10V, I_C=500mA$	40			
		$V_{CE}=1V, I_C=150mA$	35			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_{CE}=500mA, I_B=50mA$ $I_{CE}=150mA, I_B=15mA$			1.0 0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_{CE}=500mA, I_B=50mA$ $I_{CE}=150mA, I_B=15mA$			2.0 1.2	V
Transition frequency	$f_T$	$V_{CE}=20V,$ $I_C=20mA, f=100MHz$		300		MHz
Output capacitance	$C_{obo}$	$V_{CB}=10V, I_E=0, f=1MHz$			8	pF
Input capacitance	$C_{ibo}$	$V_{EB}=0.5V, I_C=0, f=1MHz$			25	pF
Noise figure	NF	$V_{CE}=10V, I_C=100\mu A$ $R_S=1.0K\Omega, f=1.0kHz$			4.0	dB
Delay Time	$t_d$	$V_{CC}=30V, I_C=150mA$			10	ns
Rise Time	$t_r$	$V_{BE(OFF)}=-0.5V, I_{B1}=15mA$			25	ns
Storage Time	$t_s$	$V_{CC}=30V, I_C=150mA$			225	ns
Fall Time	$t_f$	$I_{B1}=I_{B2}=15mA$			60	ns

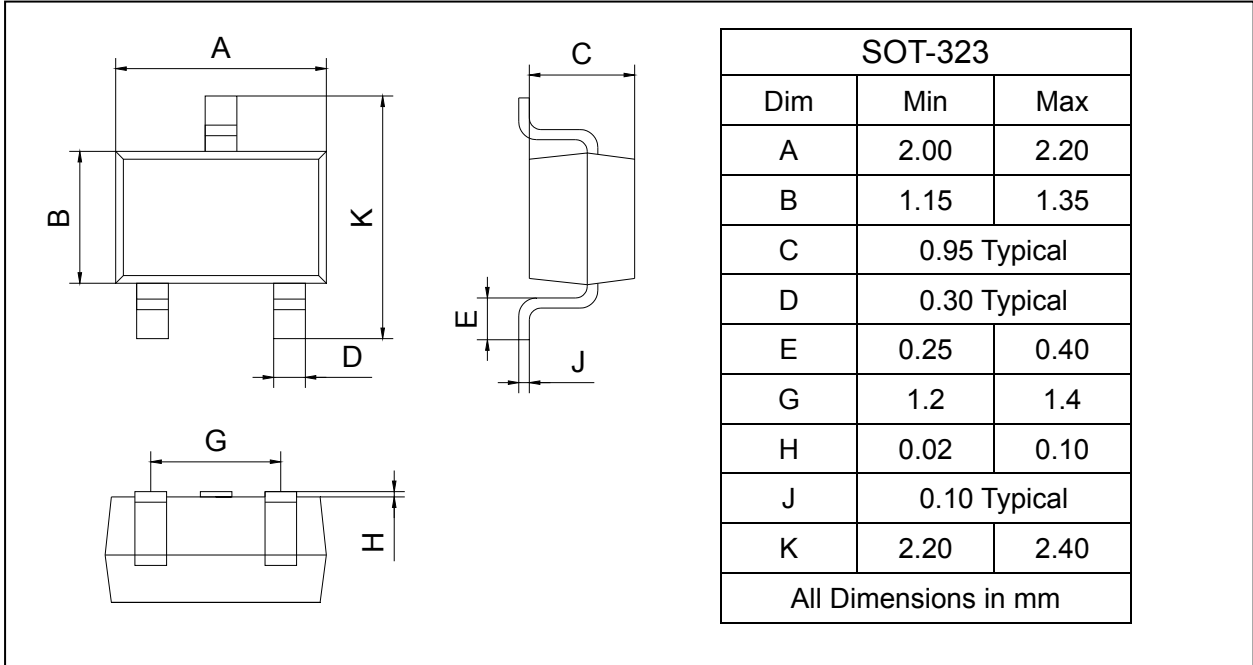
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**MMST2222A**

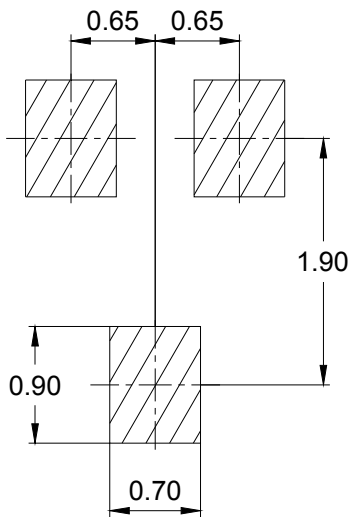
**PACKAGE OUTLINE**

Plastic surface mounted package

SOT-323



**SOLDERING FOOTPRINT**



Unit : mm

**PACKAGE INFORMATION**

Device	Package	Shipping
MMST2222A	SOT-323	3000/Tape&Reel