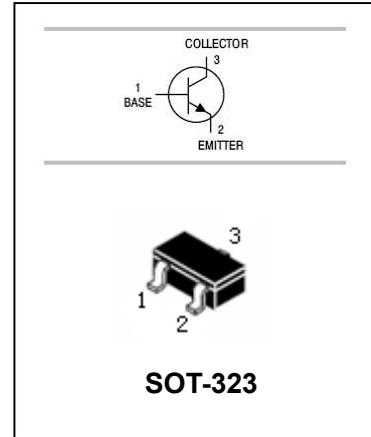


Silicon Epitaxial Planar Transistor

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_{CBO} | Collector-Base Voltage | 75 | V |
| V_{CEO} | Collector-Emitter Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 6 | V |
| I_C | Collector Current -Continuous | 600 | mA |
| P_C | Collector Dissipation | 200 | mW |
| $R_{\theta JA}$ | Thermal resistance, junction to ambient | 625 | °C/W |
| T_j, T_{stg} | Junction and Storage Temperature | -55 to +150 | °C |

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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 μA |
| 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 |

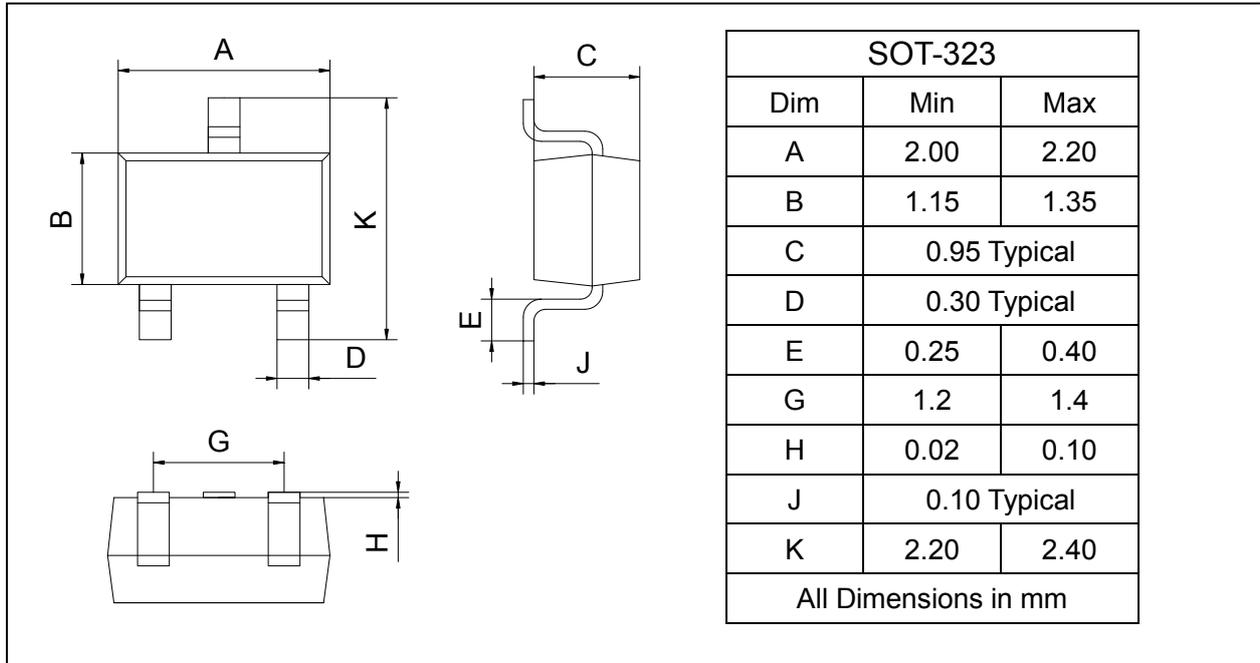
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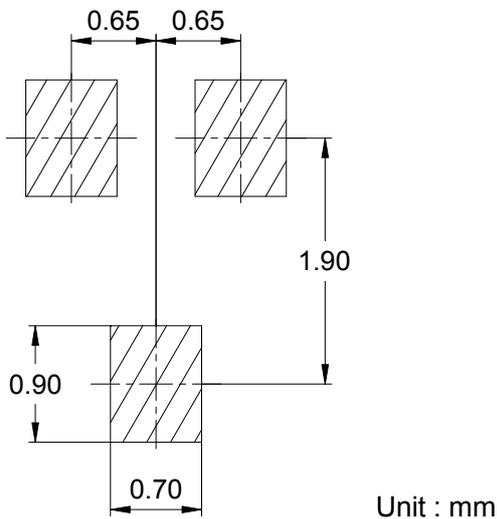
PACKAGE OUTLINE

Plastic surface mounted package

SOT-323



SOLDERING FOOTPRINT



PACKAGE INFORMATION

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