



Micro Commercial Components



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MMSTA92

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:K3R
- 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 | 5.0 | V |
| I_C | Collector Current-Continuous ^{(1) (3)} | 100 | 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 |
|--------|-----------|-----|-----|-------|
|--------|-----------|-----|-----|-------|

OFF CHARACTERISTICS

| | | | | |
|---------------|---|-----|-----|------|
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage ($I_C=1.0mA$, $I_E=0$) | 300 | --- | Vdc |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage ($I_C=100\mu A$, $I_E=0$) | 300 | --- | Vdc |
| $V_{(BR)EBO}$ | Collector-Emitter Breakdown Voltage ($I_E=100\mu A$, $I_C=0$) | 5.0 | --- | Vdc |
| I_{CBO} | Collector-Base Cutoff Current ($V_{CB}=200V$, $I_E=0$) | --- | 250 | nAdc |
| I_{EBO} | Emitter-Base Cutoff Current ($V_{CE}=3.0V$, $I_C=0$) | --- | 100 | nAdc |

ON CHARACTERISTICS⁽²⁾

| | | | | |
|---------------|---|----------------|-----|-----|
| h_{FE} | DC Current Gain ($I_C=1.0mA$, $V_{CE}=10V$) ($I_C=10mA$, $V_{CE}=10V$) ($I_C=30mA$, $V_{CE}=10V$) | 25 40 25 | --- | --- |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage ($I_C=20mA$, $I_E=2.0mA$) | --- | 0.5 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage ($I_C=20mA$, $I_E=2.0mA$) | --- | 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 ($V_{CB}=20V$, $f=1.0MHz$, $I_E=0$) | --- | 6.0 | pF |

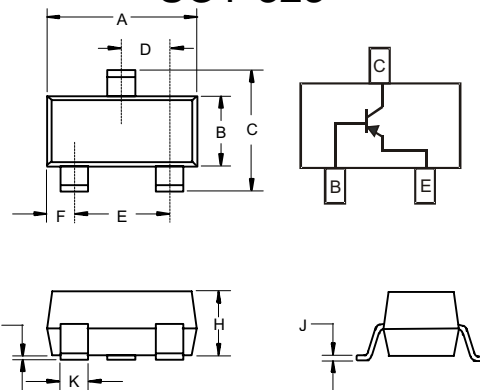
Note: 1. Valid provided that terminals are kept at ambient temperature.

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

3. When operated within safe operating area constraints.

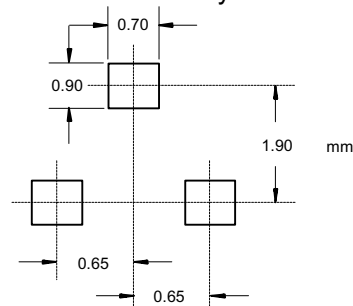
PNP Small Signal Transistors

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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