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## MPSW51A

## **Features**

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisure Sensitivity Level 1

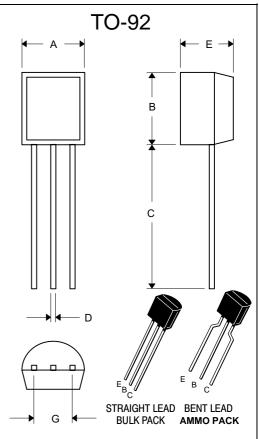
## **Maximum Ratings**

- Operating temperature : -55<sup>o</sup>C to +150<sup>o</sup>C
- Storage temperature : -55°C to +150°C

#### Electrical Characteristics @ $25^{\circ}$ C Unless Otherwise Specified

| Symbol           | Parameter                               | Unit     |       |  |
|------------------|---|----------|-------|--|
| V <sub>CEO</sub> | Collector-Emitter Voltage               | -40      | V     |  |
| V <sub>CBO</sub> | Collector-Base Voltage                  | -50 V    |       |  |
| V <sub>EBO</sub> | Emitter-Base Voltage                    | -5       | V     |  |
| Ic               | Collector Current -Continuous           | -1.0     | Α     |  |
| Pc               | Collector Power Dissipation             | 625      | mW    |  |
| RθJA             | Thermal Resistance, Junction to Ambient | 200 °C/W |       |  |
| T <sub>j</sub>   | Junction Temperature                    | 150      | 50 °C |  |
| T <sub>stg</sub> | Storage Temperature                     | -55-150  | °C    |  |

# PNP Plastic-Encapsulate Transistors



| DIMENSIONS |        |      |       |      |               |
|------------|--------|------|-------|------|---------------|
|            | INCHES |      | ММ    |      |               |
| DIM        | MIN    | MAX  | MIN   | MAX  | NOTE          |
| Α          | .175   | .185 | 4.45  | 4.70 |               |
| В          | .175   | .185 | 4.45  | 4.70 |               |
| С          | .500   |      | 12.70 |      |               |
| D          | .016   | .020 | 0.41  | 0.63 |               |
| Е          | .135   | .145 | 3.43  | 3.68 |               |
| G          | .095   | .105 | 2.42  | 2.67 | Straight Lead |
| G          | .173   | .220 | 4.40  | 5.60 | Bent Lead     |

<sup>\*</sup> For ammo packing detailed specification, click here to visit our website of product packaging for details.



# MPSW51A

### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

| Parameter                            | Symbol             | Test conditions                                     | Min | Тур | Max  | Unit |
|--------------------------------------|--------------------|---|-----|-----|------|------|
| Collector-base breakdown voltage     | $V_{(BR)CBO}$      | $I_C = -0.1 \text{mA}, I_E = 0$                     | -50 |     |      | V    |
| Collector-emitter breakdown voltage  | $V_{(BR)CEO}$      | I <sub>C</sub> =-1mA,I <sub>B</sub> =0              | -40 |     |      | V    |
| Emitter-base breakdown voltage       | $V_{(BR)EBO}$      | I <sub>E</sub> =-0.1mA,I <sub>C</sub> =0            | -5  |     |      | V    |
| Collector cut-off current            | I <sub>CBO</sub>   | V <sub>CB</sub> =-40V,I <sub>E</sub> =0             |     |     | -0.1 | μA   |
| Emitter cut-off current              | I <sub>EBO</sub>   | V <sub>EB</sub> =-3V,I <sub>C</sub> =0              |     |     | -0.1 | μΑ   |
|                                      | h <sub>FE(1)</sub> | V <sub>CE</sub> =-1V, I <sub>C</sub> =-0.01A        | 55  |     |      |      |
| DC current gain                      | h <sub>FE(2)</sub> | V <sub>CE</sub> =-1V, I <sub>C</sub> =-0.1A         | 60  |     |      |      |
|                                      | h <sub>FE(3)</sub> | V <sub>CE</sub> =-1V, I <sub>C</sub> =-1A           | 50  |     |      |      |
| Collector-emitter saturation voltage | $V_{CE(sat)}$      | I <sub>C</sub> =-1A,I <sub>B</sub> =-0.1A           |     |     | -0.7 | V    |
| Base-emitter voltage                 | $V_{BE}$           | I <sub>C</sub> =-1A, V <sub>CE</sub> =-1V           |     |     | -1.2 | V    |
| Transition frequency                 | f <sub>T</sub>     | V <sub>CE</sub> =-10V,I <sub>C</sub> =-50mA,f=20MHz | 50  |     |      | MHz  |
| Collector output capacitance         | $C_{ob}$           | V <sub>CB</sub> =-10V,I <sub>E</sub> =0, f=1MHz     |     |     | 30   | pF   |



#### **Ordering Information:**

| Device         | Packing                     |
|----------------|-----------------------------|
| Part Number-AP | Ammo Packing: 20Kpcs/Carton |
| Part Number-BP | Bulk: 100Kpcs/Carton        |

Note: Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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