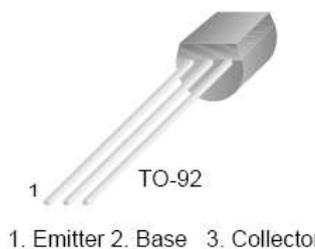


MPSA20

NPN General Purpose Amplifier

Features

- V_{CE0} 40V(Min)
- h_{FE} 40~400 @ $V_{CE}=10V, I_C=5mA$
- Pb free
- Sourced from process 10



Absolute Maximum Ratings $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Unit |
|-----------|---------------------------|-----------|------------------|
| V_{CE0} | Collector-Emitter Voltage | 40 | V |
| V_{EBO} | Emitter-Base Voltage | 4 | V |
| I_C | Collector Current | 100 | mA |
| T_J | Junction Temperature | 150 | $^\circ\text{C}$ |
| T_{STG} | Storage Temperature Range | -55 ~ 150 | $^\circ\text{C}$ |

* 1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics* $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Max | Unit |
|-----------------|---|-----|---------------------------|
| P_C | Collector Power Dissipation, by $R_{\theta JA}$ | 625 | mW |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 125 | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 200 | $^\circ\text{C}/\text{W}$ |

* 2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

3. These ratings are based on a maximum junction temperature of 150 degrees C.

4. Device mounted on FR-4 PCB 36mm * 1.5mm: Mounting pad for the collector lead min.6cm.

Electrical Characteristics* $T_a=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Unit |
|---------------|--------------------------------------|---------------------------------------|------|------|------|
| BV_{CE0} | Collector-Emitter Breakdown Voltage | $I_C = 1mA, I_B = 0$ | 40 | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E = 100\mu A, I_C = 0$ | 4 | | V |
| I_{CBO} | Collector Cut-off Current | $V_{CB} = 30V$ | | 100 | nA |
| h_{FE} | DC Current Gain | $V_{CE} = 10V, I_C = 5mA$ | 40 | 400 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 10mA, I_B = 1mA$ | | 0.25 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE} = -10V, I_C = -10mA$ | -0.5 | -1.2 | V |
| C_{cb} | Output Capacitance | $V_{CB} = 10V, f = 100kHz$ | | 4.0 | pF |
| f_T | Current Gain Bandwidth Product | $V_{CE} = 10V, I_C = 5mA, f = 100MHz$ | 125 | | Mhz |

* DC Item are tested by Pulse Test : Pulse Width \leq 300us, Duty Cycle \leq 2%



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