# MPS2222 NPN EPITAXIAL SILICON TRANSISTOR

## GENERAL PURPOSE TRANSISTOR

- **Collector-Emitter Voltage: $V_{CEO}$=30V**
- **Collector Dissipation: $P_C$ (max)=625mW**

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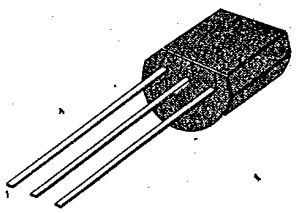

1. Emitter 2. Base 3. Collector

## ABSOLUTE MAXIMUM RATINGS ($T_a$=25°C)

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector-Base Voltage | $V_{CBO}$ | 60 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | 30 | V |
| Emitter-Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 600 | mA |
| Collector Dissipation | $P_C$ | 625 | mW |
| Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature | Tstg | −55~150 | °C |

## ELECTRICAL CHARACTERISTICS ($T_a$=25°C)

| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector-Base Breakdown Voltage | $BV_{CBO}$ | $I_C$=10μA, $I_E$=0 | 60 | | | V |
| Collector-Emitter Breakdown Voltage | $BV_{CEO}$ | $I_C$=10mA, $I_B$=0 | 30 | | | V |
| Emitter-Base Breakdown Voltage | $BV_{EBO}$ | $I_E$=10μA, $I_C$=0 | 5 | | | V |
| Collector Cut-off Current | $I_{CBO}$ | $V_{CB}$=50V, $I_E$=0 | | | 10 | nA |
| DC Current Gain | $h_{FE}$ | $I_C$=0.1mA, $V_{CE}$=10V | 35 | | | |
| | | $I_C$=1mA, $V_{CE}$=10V | 50 | | | |
| | | $I_C$=10mA, $V_{CE}$=10V | 75 | | | |
| | | *$I_C$=150mA, $V_{CE}$=10V | 100 | | 300 | |
| | | *$I_C$=500mA, $V_{CE}$=10V | 30 | | | |
| *Collector-Emitter Saturation Voltage | $V_{CE}$ (sat) | $I_C$=150mA, $I_B$=15mA | | | 0.4 | V |
| | | $I_C$=500mA, $I_B$=50mA | | | 1.6 | V |
| *Base-Emitter Saturation Voltage | $V_{BE}$ (sat) | $I_C$=150mA, $I_B$=15mA | | | 1.3 | V |
| | | $I_C$=500mA, $I_B$=50mA | | | 2.6 | V |
| Output Capacitance | Cob | $V_{CB}$=10V, $I_E$=0, f=1MHz | | | 8 | pF |
| Current Gain Bandwidth Product | $f_T$ | $I_C$=20mA, $V_{CE}$=20V f=100MHz | 250 | | | MHz |
| Turn On Time | ton | $V_{CC}$=30V, $V_{BE}$=0.5V $I_C$=150mA, $I_{B1}$=15mA | | | 35 | ns |
| Turn Off Time | toff | $V_{CC}$=30V, $I_C$=150mA $I_{B1}$=$I_{B2}$=15mA | | | 285 | ns |

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%
Also available as a PN2222

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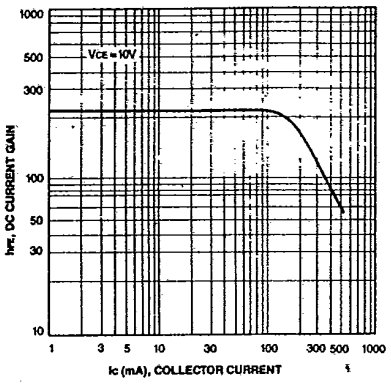
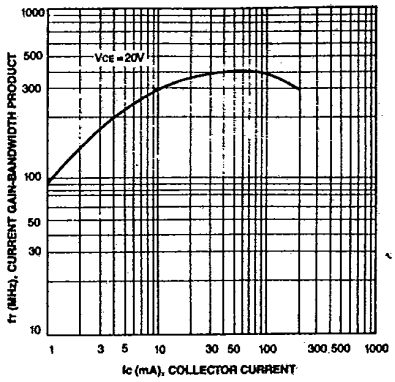
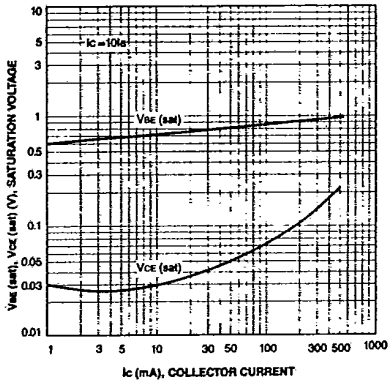
DC CURRENT GAIN



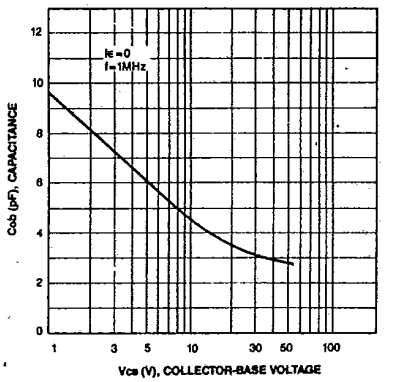

CURRENT GAIN-BANDWIDTH PRODUCT




COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE




OUTPUT CAPACITANCE

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