

2N3414 MPS3414
 2N3415 MPS3415
 2N3416 MPS3416
 2N3417 MPS3417

**SILICON
 NPN TRANSISTORS**



TO-92 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3414, MPS3414 series devices are silicon NPN transistors, manufactured by the epitaxial planar process, designed for general purpose and switching applications.

MARKING: FULL PART NUMBER

| | SYMBOL | 2N3414 | 2N3416 | UNITS |
|--|----------------|---------|-------------|------------------|
| | | 2N3415 | 2N3417 | |
| MAXIMUM RATINGS: ($T_A=25^\circ\text{C}$ unless otherwise noted) | | | | |
| | | MPS3414 | MPS3416 | |
| | | MPS3415 | MPS3417 | |
| Collector-Base Voltage | V_{CBO} | 25 | 50 | V |
| Collector-Emitter Voltage | V_{CEO} | 25 | 50 | V |
| Emitter-Base Voltage | V_{EBO} | | 5.0 | V |
| Continuous Collector Current | I_C | | 500 | mA |
| Power Dissipation | P_D | | 625 | mW |
| Power Dissipation ($T_C=25^\circ\text{C}$) | P_D | | 1.5 | W |
| Operating and Storage Junction Temperature | T_J, T_{stg} | | -65 to +150 | $^\circ\text{C}$ |

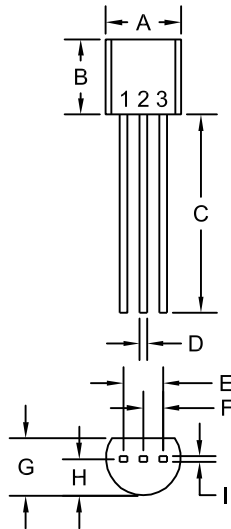
| ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted) | | | | |
|---|--|-----|------|-------|
| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
| I_{CBO} | $V_{CB}=\text{Rated } V_{CBO}$ | | 100 | nA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | 100 | nA |
| BV_{CEO} | $I_C=10\text{mA}$ (3414, 3415) | 25 | | V |
| BV_{CEO} | $I_C=10\text{mA}$ (3416, 3417) | 50 | | V |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=3.0\text{mA}$ | | 0.3 | V |
| $V_{BE(SAT)}$ | $I_C=50\text{mA}, I_B=3.0\text{mA}$ | | 0.85 | V |
| h_{FE} | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}$ (3414, 3416) | 75 | 225 | |
| h_{FE} | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}$ (3415, 3417) | 180 | 540 | |
| h_{fe} | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}, f=1.0\text{kHz}$ (3414, 3416) | 75 | | |
| h_{fe} | $V_{CE}=4.5\text{V}, I_C=2.0\text{mA}, f=1.0\text{kHz}$ (3415, 3417) | 180 | | |

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TO-92 CASE - MECHANICAL OUTLINE



R1

| SYMBOL | INCHES | | MILLIMETERS | |
|---------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A (DIA) | 0.175 | 0.205 | 4.45 | 5.21 |
| B | 0.170 | 0.210 | 4.32 | 5.33 |
| C | 0.500 | - | 12.70 | - |
| D | 0.016 | 0.022 | 0.41 | 0.56 |
| E | 0.100 | | 2.54 | |
| F | 0.050 | | 1.27 | |
| G | 0.125 | 0.165 | 3.18 | 4.19 |
| H | 0.080 | 0.105 | 2.03 | 2.67 |
| I | 0.015 | | 0.38 | |

TO-92 (REV: R1)

2N3414 THRU 2N3417

LEAD CODE:

- 1) Emitter
- 2) Collector
- 3) Base

MPS3414 THRU MPS3417

LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING:

FULL PART NUMBER

R3 (10-September 2013)



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- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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