

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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

SILICON  
NPN TRANSISTORS



TO-92 CASE



[www.centralsemi.com](http://www.centralsemi.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**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

	SYMBOL	2N3414 MPS3415	2N3416 MPS3416	2N3417 MPS3417	UNITS
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)

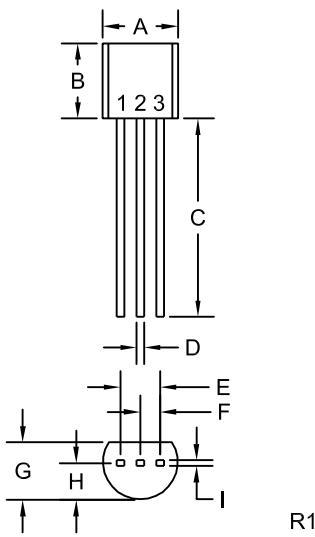
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=\text{Rated } V_{CBO}$		100	nA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		100	nA
$BV_{CEO}$	$I_C=10\text{mA}$ (3414, 3415)	25		V
$BV_{CEO}$	$I_C=10\text{mA}$ (3416, 3417)	50		V
$V_{CE(\text{SAT})}$	$I_C=50\text{mA}, I_B=3.0\text{mA}$		0.3	V
$V_{BE(\text{SAT})}$	$I_C=50\text{mA}, I_B=3.0\text{mA}$		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		

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

SILICON  
 NPN TRANSISTORS



TO-92 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	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)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### 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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### CONTACT US

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