

2N3713 2N3715
2N3714 2N3716

**SILICON
NPN TRANSISTORS**



TO-3 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3713, 2N3714, 2N3715, and 2N3716 are silicon NPN power transistors manufactured by the epitaxial-base process, mounted in a hermetically sealed metal package designed for medium speed switching and amplifier applications.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$)

	2N3713	2N3714	UNITS
Collector-Base Voltage	80	100	V
Collector-Emitter Voltage	60	80	V
Emitter-Base Voltage	7.0		V
Continuous Collector Current	10		A
Continuous Base Current	4.0		A
Power Dissipation	150		W
Operating and Storage Junction Temperature	-65 to +200		$^\circ\text{C}$
Thermal Resistance	1.17		$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CEV}	$V_{CE}=\text{Rated } V_{CBO}, V_{BE}=1.5\text{V}$			1.0	mA
I_{CEV}	$V_{CE}=\text{Rated } V_{CEO}, V_{BE}=1.5\text{V}, T_C=150^\circ\text{C}$			10	mA
I_{EBO}	$V_{EB}=7.0\text{V}$			5.0	mA
BV_{CEO}	$I_C=200\text{mA}$ (2N3713, 2N3715)	60			V
BV_{CEO}	$I_C=200\text{mA}$ (2N3714, 2N3716)	80			V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=0.5\text{A}$ (2N3713, 2N3714)			1.0	V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=0.5\text{A}$ (2N3715, 2N3716)			0.8	V
$V_{BE(SAT)}$	$I_C=5.0\text{A}, I_B=0.5\text{A}$ (2N3713, 2N3714)			2.0	V
$V_{BE(SAT)}$	$I_C=5.0\text{A}, I_B=0.5\text{A}$ (2N3715, 2N3716)			1.5	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=3.0\text{A}$			1.5	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$ (2N3713, 2N3714)	40		120	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$ (2N3715, 2N3716)	50		150	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=3.0\text{A}$ (2N3713, 2N3714)	15			
h_{FE}	$V_{CE}=2.0\text{V}, I_C=3.0\text{A}$ (2N3715, 2N3716)	30			
f_T	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{MHz}$	4.0			MHz
t_r	$I_C=5.0\text{A}, I_{B1}=I_{B2}=0.5\text{A}$		0.4		μs
t_s	$I_C=5.0\text{A}, I_{B1}=I_{B2}=0.5\text{A}$		0.3		μs
t_f	$I_C=5.0\text{A}, I_{B1}=I_{B2}=0.5\text{A}$		0.4		μs

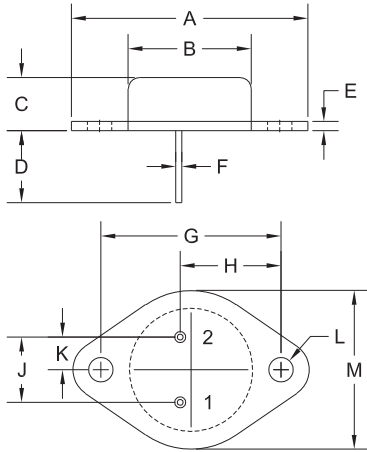
R2 (18-June 2013)

2N3713 2N3715
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TO-3 CASE - MECHANICAL OUTLINE



R2

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.516	1.573	38.50	39.96
B (DIA)	0.748	0.875	19.00	22.23
C	0.250	0.450	6.35	11.43
D	0.433	0.516	11.00	13.10
E	0.054	0.065	1.38	1.65
F	0.035	0.045	0.90	1.15
G	1.177	1.197	29.90	30.40
H	0.650	0.681	16.50	17.30
J	0.420	0.440	10.67	11.18
K	0.205	0.225	5.21	5.72
L (DIA)	0.151	0.172	3.84	4.36
M	0.984	1.050	25.00	26.67

TO-3 (REV: R2)

LEAD CODE:

- 1) Base
- 2) Emitter
- Case) Collector

MARKING:

FULL PART NUMBER

R2 (18-June 2013)

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CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centalsemi.com

Worldwide Field Representatives:
www.centalsemi.com/wwreps

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