

# Central<sup>TM</sup> Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA  
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N6648  
2N6649  
2N6650

PNP SILICON POWER  
DARLINGTON TRANSISTOR

JEDEC TO-3 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N6648 series types are PNP Silicon Power Darlington Transistors designed for power switching and amplifier applications.

## MAXIMUM RATINGS (T<sub>C</sub>=25°C)

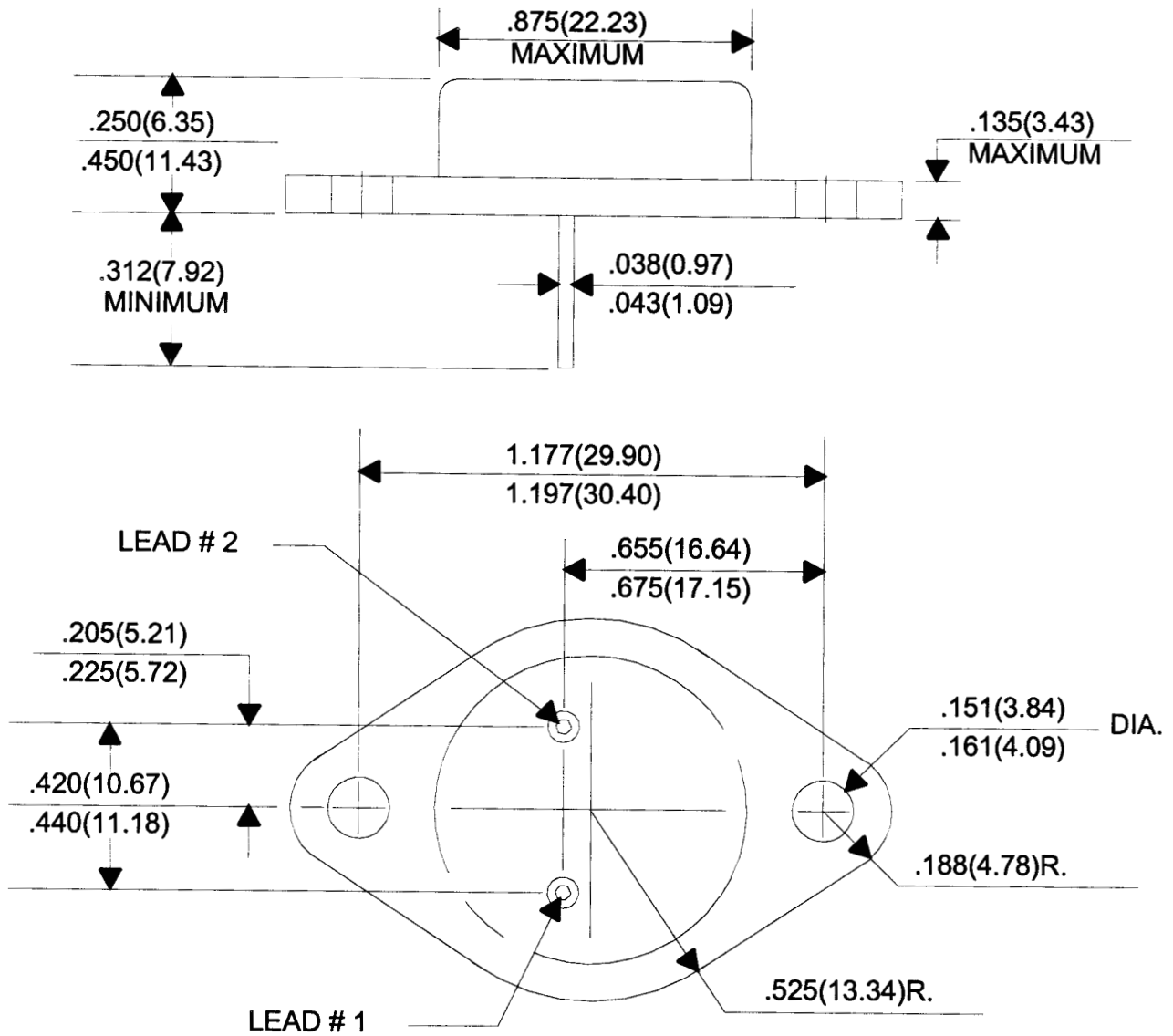
	SYMBOL	2N6648	2N6649	2N6650	UNITS
Collector-Base Voltage	V <sub>CBO</sub>	40	60	80	V
Collector-Emitter Voltage	V <sub>CEX</sub>	40	60	80	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	60	80	V
Emitter-Base Voltage	V <sub>EBO</sub>		5.0		V
Continuous Collector Current	I <sub>C</sub>		10		A
Peak Collector Current	I <sub>CM</sub>		15		A
Continuous Base Current	I <sub>B</sub>		250		mA
Power Dissipation	P <sub>D</sub>		100		W
Operating and Storage					
Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>		-65 to +200		°C
Thermal Resistance	θ <sub>JC</sub>		1.75		°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N6648		2N6649		2N6650		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
I <sub>CEV</sub>	V <sub>CEV</sub> =Rated V <sub>CEO</sub> , V <sub>BE(off)</sub> =1.5V		0.3		0.3		0.3	mA
I <sub>CEV</sub>	V <sub>CEV</sub> =Rated V <sub>CEO</sub> , V <sub>BE(off)</sub> =1.5V, T <sub>C</sub> =150°C		3.0		3.0		3.0	mA
I <sub>CEO</sub>	V <sub>CE</sub> = Rated V <sub>CEO</sub>		1.0		1.0		1.0	mA
I <sub>EBO</sub>	V <sub>EB</sub> =5.0V		10		10		10	mA
BV <sub>CEV</sub>	I <sub>C</sub> =100mA, V <sub>BE(off)</sub> =1.5V		40		60		80	V
BV <sub>CER</sub>	I <sub>C</sub> =100mA, R <sub>BE</sub> =100Ω		40		60		80	V
BV <sub>CEO</sub>	I <sub>C</sub> =100mA		40		60		80	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =5.0A, I <sub>B</sub> =10mA		2.0		2.0		2.0	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =10A, I <sub>B</sub> =100mA		3.0		3.0		3.0	V
V <sub>BE(ON)</sub>	V <sub>CE</sub> =3.0V, I <sub>C</sub> =5.0A		2.8		2.8		2.8	V
V <sub>BE(ON)</sub>	V <sub>CE</sub> =3.0V, I <sub>C</sub> =10A		4.5		4.5		4.5	V
h <sub>FE</sub>	V <sub>CE</sub> =3.0V, I <sub>C</sub> =5.0A	1K	20K	1K	20K	1K	20K	
h <sub>FE</sub>	V <sub>CE</sub> =3.0V, I <sub>C</sub> =10A	100		100		100		
V <sub>F</sub>	I <sub>F</sub> =10A		4.0		4.0		4.0	V
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1.0MHz		200		200		200	pF
h <sub>hel</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0A, f=1.0MHz	20		20		20		
h <sub>he</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0A, f=1.0kHz	1K		1K		1K		

(SEE REVERSE SIDE)

# TO-3 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

Lead Code:

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

**Central**<sup>TM</sup>  
**Semiconductor Corp.**

## 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

#### 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.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

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