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

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Manufacturers of World Class Discrete Semiconductors

2N5875 2N5876 PNP  
2N5877 2N5878 NPN  
COMPLEMENTARY SILICON  
POWER TRANSISTORS

JEDEC TO-3 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5875, 2N5877 series types are Complementary Silicon Power Transistors manufactured by the epitaxial base process mounted in a hermetically sealed metal case designed for general purpose switching and amplifier applications.

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

	SYMBOL	2N5875 2N5877	2N5876 2N5878	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	60	80	V
Collector-Emitter Voltage	V <sub>CEO</sub>	60	80	V
Emitter-Base Voltage	V <sub>EBO</sub>		5.0	V
Collector Current	I <sub>C</sub>		10	A
Collector Current (PEAK)	I <sub>C</sub>		20	A
Base Current	I <sub>B</sub>		4.0	A
Power Dissipation	P <sub>D</sub>		150	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 TO +200		°C
Thermal Resistance	θ <sub>JC</sub>	1.17		°C/W

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

SYMBOL	TEST CONDITIONS	2N5875 2N5877		2N5876 2N5878		UNIT
		MIN	MAX	MIN	MAX	
I <sub>CEV</sub>	V <sub>CE</sub> =Rated V <sub>CEO</sub> , V <sub>BE</sub> (OFF) 1.5V		0.5		0.5	mA
I <sub>CEV</sub>	V <sub>CE</sub> =Rated V <sub>CEO</sub> , V <sub>BE</sub> (OFF)=1.5V, T <sub>C</sub> =150°C		5.0		5.0	mA
I <sub>CEO</sub>	V <sub>CE</sub> =½ Rated V <sub>CEO</sub>		1.0		1.0	mA
I <sub>CBO</sub>	V <sub>CB</sub> =Rated V <sub>CBO</sub>		0.5		0.5	mA
I <sub>EBO</sub>	V <sub>EB</sub> =5.0V		1.0		1.0	mA
BV <sub>CEO</sub>	I <sub>C</sub> =200mA	60		80		V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =5.0A, I <sub>B</sub> =0.5A		1.0		1.0	V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =10A, I <sub>B</sub> =2.5A		3.0		3.0	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =10A, I <sub>B</sub> =2.5A		2.5		2.5	V
V <sub>BE</sub> (ON)	V <sub>CE</sub> =4.0V, I <sub>C</sub> =4.0A		1.5		1.5	V
h <sub>FE</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =1.0A	35		35		
h <sub>FE</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =4.0A	20	100	20	100	
h <sub>FE</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =10A	4.0		4.0		
h <sub>fe</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =1.0A, f=1.0kHz	20		20		
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A, f=1.0MHz	4.0		4.0		MHz
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1.0MHz (PNP TYPES)		500		500	pF
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1.0MHz (NPN TYPES)		300		300	pF
t <sub>r</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =4.0A, I <sub>B1</sub> =I <sub>B2</sub> =0.4A		0.7		0.7	µs
t <sub>off</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =4.0A, I <sub>B1</sub> =I <sub>B2</sub> =0.4A		1.8		1.8	µs

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- Up-screening capabilities
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- PbSn plating options
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- Application notes
- Application and design sample kits
- Custom product and package development

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