

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

	SYMBOL	2N5875 2N5877	2N5876 2N5878	UNIT
Collector-Base Voltage	$V_{CB0}$	60	80	V
Collector-Emitter Voltage	$V_{CE0}$	60	80	V
Emitter-Base Voltage	$V_{EB0}$	5.0		V
Collector Current	$I_C$	10		A
Collector Current (PEAK)	$I_C$	20		A
Base Current	$I_B$	4.0		A
Power Dissipation	$P_D$	150		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 TO +200		$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	1.17		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5875 2N5877		2N5876 2N5878		UNIT
		MIN	MAX	MIN	MAX	
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF}) 1.5\text{V}$		0.5		0.5	mA
$I_{CEV}$	$V_{CE}=\text{Rated } V_{CE0}, V_{BE}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$		5.0		5.0	mA
$I_{CE0}$	$V_{CE}=\frac{1}{2}\text{Rated } V_{CE0}$		1.0		1.0	mA
$I_{CB0}$	$V_{CB}=\text{Rated } V_{CB0}$		0.5		0.5	mA
$I_{EB0}$	$V_{EB}=5.0\text{V}$		1.0		1.0	mA
$BV_{CE0}$	$I_C=200\text{mA}$	60		80		V
$V_{CE}(\text{SAT})$	$I_C=5.0\text{A}, I_B=0.5\text{A}$		1.0		1.0	V
$V_{CE}(\text{SAT})$	$I_C=10\text{A}, I_B=2.5\text{A}$		3.0		3.0	V
$V_{BE}(\text{SAT})$	$I_C=10\text{A}, I_B=2.5\text{A}$		2.5		2.5	V
$V_{BE}(\text{ON})$	$V_{CE}=4.0\text{V}, I_C=4.0\text{A}$		1.5		1.5	V
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=1.0\text{A}$	35		35		
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=4.0\text{A}$	20	100	20	100	
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=10\text{A}$	4.0		4.0		
$h_{fe}$	$V_{CE}=4.0\text{V}, I_C=1.0\text{A}, f=1.0\text{kHz}$	20		20		
$f_T$	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=1.0\text{MHz}$	4.0		4.0		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ (PNP TYPES)		500		500	pF
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ (NPN TYPES)		300		300	pF
$t_r$	$V_{CC}=30\text{V}, I_C=4.0\text{A}, I_{B1}=I_{B2}=0.4\text{A}$		0.7		0.7	$\mu\text{s}$
$t_{off}$	$V_{CC}=30\text{V}, I_C=4.0\text{A}, I_{B1}=I_{B2}=0.4\text{A}$		1.8		1.8	$\mu\text{s}$

## 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

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