

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

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Manufacturers of World Class Discrete Semiconductors

2N5879 2N5880 PNP  
2N5881 2N5882 NPN

COMPLIMENTARY SILICON  
POWER TRANSISTORS

JEDEC TO-3 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5879, 2N5881 series types are Complimentary 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 ( $T_C=25^\circ\text{C}$ )

	SYMBOL	2N5879 2N5881	2N5880 2N5882	UNIT
Collector-Base Voltage	$V_{CB0}$	60	80	V
Collector-Emitter Voltage	$V_{CE0}$	60	80	V
Emitter Base Voltage	$V_{EBO}$	5.0		V
Collector Current	$I_C$	15		A
Collector Current (PEAK)	$I_{CM}$	30		A
Base Current	$I_B$	5.0		A
Power Dissipation	$P_D$	160		W
Operating and Storage Junction and Temperature	$T_J, T_{stg}$	-65 TO +200		$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	1.1		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5879 2N5881		2N5880 2N5882		UNIT
		MIN	MAX	MIN	MAX	
$I_{CB0}$	$V_{CB}=\text{RATED } V_{CB0}$		0.5		0.5	mA
$I_{CEV}$	$V_{CE}=\text{RATED } V_{CE0}, V_{BE}=1.5\text{V}$		0.5		0.5	mA
$I_{CEV}$	$V_{CE}=\text{RATED } V_{CE0}, T_C=150^\circ\text{C}$		5.0		5.0	mA
$I_{CE0}$	$V_{CE}=\frac{1}{2}\text{RATED } V_{CE0}$		1.0		1.0	mA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		1.0		1.0	mA
$BV_{CE0}$	$I_C=200\text{mA}$	60		80		V
$V_{CE}(\text{SAT})$	$I_C=7.0\text{A}, I_B=0.7\text{A}$		1.0		1.0	V
$V_{CE}(\text{SAT})$	$I_C=15\text{A}, I_B=3.75\text{A}$		4.0		4.0	V
$V_{BE}(\text{SAT})$	$I_C=15\text{A}, I_B=3.75\text{A}$		2.5		2.5	V
$V_{BE}(\text{ON})$	$V_{CE}=4.0\text{V}, I_C=6.0\text{A}$		1.5		1.5	V
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=2.0\text{A}$	35		35		
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=6.0\text{A}$	20	100	20	100	
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=15\text{A}$	4.0		4.0		
$h_{fe}$	$V_{CE}=4.0\text{V}, I_C=2.0\text{A}, f=1.0\text{kHz}$	20		20		
$f_T$	$V_{CE}=10\text{V}, I_C=1.0\text{A}, f=1.0\text{MHz}$	4.0		4.0		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (PNP TYPES)		600		600	pF
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$ (NPN TYPES)		400		400	pF
$t_r$	$V_{CC}=30\text{V}, I_C=6.0\text{A}, I_{B1}=I_{B2}=0.6\text{A}$		0.7		0.7	$\mu\text{s}$
$t_s$	$V_{CC}=30\text{V}, I_C=6.0\text{A}, I_{B1}=I_{B2}=0.6\text{A}$		1.0		1.0	$\mu\text{s}$
$t_f$	$V_{CC}=30\text{V}, I_C=6.0\text{A}, I_{B1}=I_{B2}=0.6\text{A}$		0.8		0.8	$\mu\text{s}$