

# 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

MJE170 MJE171 MJE172 PNP  
MJE180 MJE181 MJE182 NPN

SILICON COMPLEMENTARY  
POWER TRANSISTOR

JEDEC TO-126 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR MJE170, MJE180 series types are complementary Silicon Plastic Power Transistors designed for audio and high speed switching applications.

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

	SYMBOL	MJE170 MJE180	MJE171 MJE181	MJE172 MJE182	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	60	80	100	V
Collector-Emitter Voltage	V <sub>CE0</sub>	40	60	80	V
Emitter-Base Voltage	V <sub>EB0</sub>	7.0	7.0	7.0	V
Collector Current	I <sub>C</sub>	3.0	3.0	3.0	A
Collector Current (Peak)	I <sub>CM</sub>	6.0	6.0	6.0	A
Base Current	I <sub>B</sub>	1.0	1.0	1.0	A
Power Dissipation (T <sub>A</sub> =25°C)	P <sub>D</sub>	1.5	1.5	1.5	W
Power Dissipation	P <sub>D</sub>	15	15	15	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 TO +150			°C
Thermal Resistance	θ <sub>JA</sub>	83			°C/W
Thermal Resistance	θ <sub>JC</sub>	8.3			°C/W

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
I <sub>CB0</sub>	V <sub>CB</sub> =Rated V <sub>CB0</sub>		0.1	μA
I <sub>CB0</sub>	V <sub>CB</sub> =Rated V <sub>CB0</sub> , T <sub>C</sub> =150°C		0.1	mA
I <sub>EB0</sub>	V <sub>BE</sub> =7.0V		0.1	μA
BV <sub>CE0</sub>	I <sub>C</sub> =10mA, (MJE170, MJE180)	40		V
BV <sub>CE0</sub>	I <sub>C</sub> =10mA, (MJE171, MJE181)	60		V
BV <sub>CE0</sub>	I <sub>C</sub> =10mA, (MJE172, MJE182)	80		V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		0.3	V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =1.5A, I <sub>B</sub> =150mA		0.9	V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =3.0A, I <sub>B</sub> =600mA		1.7	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =1.5A, I <sub>B</sub> =150mA		1.5	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =3.0A, I <sub>B</sub> =600mA		2.0	V
V <sub>BE</sub> (ON)	V <sub>CE</sub> =1.0V, I <sub>C</sub> =500mA		1.2	V
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =100mA	50	250	
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =500mA	30		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =1.5A	12		
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =100mA, f=10MHz	50		MHz
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz (NPN)		30	pF
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz (PNP)		50	pF