

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

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Manufacturers of World Class Discrete Semiconductors

TIP100 TIP101 TIP102 NPN  
TIP105 TIP106 TIP107 PNP

SILICON POWER DARLINGTON  
COMPLEMENTARY TRANSISTORS

JEDEC TO-220AB CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP100, TIP105 Series are Complementary Silicon Power Darlington Transistors designed for low speed switching and power amplifier applications

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

	SYMBOL	TIP100 TIP105	TIP101 TIP106	TIP102 TIP107	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	60	80	100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	60	80	100	V
Emitter-Base Voltage	V <sub>EB0</sub>	5.0	5.0	5.0	V
Collector Current	I <sub>C</sub>	8.0	8.0	8.0	A
Collector Current (Peak)	I <sub>CM</sub>	15	15	15	A
Base Current	I <sub>B</sub>	1.0	1.0	1.0	A
Power Dissipation	P <sub>D</sub>	80	80	80	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 TO +150			°C
Thermal Resistance	θ <sub>JC</sub>	1.56	1.56	1.56	°C/W

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

SYMBOL	TEST CONDITIONS	TIP100 TIP105		TIP101 TIP106		TIP102 TIP107		UNIT
		MIN	MAX	MIN	MAX	MIN	MAX	
I <sub>CB0</sub>	V <sub>CB</sub> =Rated V <sub>CB0</sub>		50		50		50	μA
I <sub>CEO</sub>	V <sub>CE</sub> =½ Rated V <sub>CEO</sub>		50		50		50	μA
I <sub>EBO</sub>	V <sub>BE</sub> =5.0V		8.0		8.0		8.0	mA
BV <sub>CEO</sub>	I <sub>C</sub> =30mA	60		80		100		V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =3.0A, I <sub>B</sub> =6.0mA		2.0		2.0		2.0	V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =8.0A, I <sub>B</sub> =80mA		2.5		2.5		2.5	V
V <sub>BE</sub> (ON)	V <sub>CE</sub> =4.0V, I <sub>C</sub> =8.0mA		2.8		2.8		2.8	V
h <sub>FE</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =3.0A	1,000	20,000	1,000	20,000	1,000	20,000	
h <sub>FE</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =8.0A	200	---	200	---	200	---	
f <sub>T</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =3.0A, f=1.0MHz		4.0		4.0		4.0	MHz
				<u>MIN</u>		<u>MAX</u>		
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz (TIP100, TIP101, TIP102 ONLY)					200		pF
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz (TIP105, TIP106, TIP107 ONLY)					300		pF