Data Sheet

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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_C=25°C)

	SYMBOL	TIP100 TIP105	TIP101 TIP106	TIP102 TIP107	UNIT
Collector-Base Voltage	V_{CBO}	60	80	100	V
Collector-Emitter Voltage	V_{CEO}	60	80	100	V
Emitter-Base Voltage	V_{EBO}	5.0	5.0	5.0	V
Collector Current	I_C	8.0	8.0	8.0	A
Collector Current (Peak)	I_{CM}	15	15	15	A
Base Current	I_B	1.0	1.0	1.0	A
Power Dissipation	P_D	80	80	80	W
Operating and Storage Junction Temperature	T_J, T_{stg}		-65 TO +150		°C
Thermal Resistance	θ_{JC}	1.56	1.56	1.56	°C/W

ELECTRICAL CHARACTERISTICS (T_C=25°C)

SYMBOL	TEST CONDITIONS	TIP100 TIP105 MIN	TIP100 TIP105 MAX	TIP101 TIP106 MIN	TIP101 TIP106 MAX	TIP102 TIP107 MIN	TIP102 TIP107 MAX	UNIT
I_{CBO}	V_{CB}=Rated V_{CBO}		50		50		50	μA
I_{CEO}	V_{CE}=½ Rated V_{CEO}		50		50		50	μA
I_{EBO}	V_{BE}=5.0V		8.0		8.0		8.0	mA
BV_{CEO}	I_C=30mA	60		80		100		V
$V_{CE(SAT)}$	I_C=3.0A, I_B=6.0mA		2.0		2.0		2.0	V
$V_{CE(SAT)}$	I_C=8.0A, I_B=80mA		2.5		2.5		2.5	V
$V_{BE(ON)}$	V_{CE}=4.0V, I_C=8.0mA		2.8		2.8		2.8	V
h_{FE}	V_{CE}=4.0V, I_C=3.0A	1,000	20,000	1,000	20,000	1,000	20,000	
h_{FE}	V_{CE}=4.0V, I_C=8.0A	200	---	200	---	200	---	
f_T	V_{CE}=4.0V, I_C=3.0A, f=1.0MHz	4.0		4.0		4.0		MHz

		MIN	MAX	
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (TIP100, TIP101, TIP102 ONLY)		200	pF
C_{ob}	V_{CB}=10V, I_E=0, f=0.1MHz (TIP105, TIP106, TIP107 ONLY)		300	pF