

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5306
2N5308

NPN SILICON
DARLINGTON TRANSISTOR

JEDEC TO-92 CASE (ECB)

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5306, 2N5308 types are NPN Silicon Epitaxial Planar Darlington Transistors designed for high gain amplifier applications.

MAXIMUM RATINGS (T_A = 25°C)

	SYMBOL	2N5306	2N5308	UNITS
Collector-Base Voltage	V _{CB0}	25	40	V
Collector-Emitter Voltage	V _{CEO}	25	40	V
Emitter-Base Voltage	V _{EBO}	12		V
Continuous Collector Current	I _C	300		mA
Peak Collector Current	I _{CM}	500		mA
Continuous Base Current	I _B	50		mA
Power Dissipation	P _D	625		mW
Power Dissipation (T _C = 25°C)	P _D	1.5		W
Operating and Storage				
Junction Temperature	T _J , T _{stg}	-65 to +150		°C
Thermal Resistance	θ _{JA}	200		°C/W
Thermal Resistance	θ _{JC}	83.3		°C/W

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N5306		2N5308		UNITS
		MIN	MAX	MIN	MAX	
I _{CBO}	V _{CB} = Rated V _{CB0}		100		100	nA
I _{CBO}	V _{CB} = Rated V _{CB0} , T _A = 100°C		20		20	μA
I _{EBO}	V _{EB} = 12V		100		100	nA
BV _{CB0}	I _C = 100nA	25		40		V
BV _{CEO}	I _C = 10mA	25		40		V
BV _{EBO}	I _E = 100nA	12		12		V
V _{CE(SAT)}	I _C = 200mA, I _B = 0.2mA		1.4		1.4	V
V _{BE(SAT)}	I _C = 200mA, I _B = 0.2mA		1.6		1.6	V
V _{BE(ON)}	V _{CE} = 5.0V, I _C = 200mA		1.5		1.5	V
h _{FE}	V _{CE} = 5.0V, I _C = 2.0mA	7K	70K	7K	70K	
h _{FE}	V _{CE} = 5.0V, I _C = 100mA	20K		20K		

(Continued on Reverse Side)

ELECTRICAL CHARACTERISTICS (Continued)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNITS</u>
h_{fe}	$V_{CE} = 5.0V, I_C = 2.0mA, f = 1.0kHz$	7K			
$ h_{fe} $	$V_{CE} = 5.0V, I_C = 2.0mA, f = 10MHz$	15.6			dB
f_T	$V_{CE} = 5.0V, I_C = 2.0mA, f = 10MHz$	60			MHz
h_{ie}	$V_{CE} = 5.0V, I_C = 2.0mA, f = 1.0kHz$		650		k Ω
C_{cb}	$V_{CB} = 10V, f = 1.0MHz$			10	pF
C_{eb}	$V_{EB} = 0.5V, f = 1.0MHz$		12		pF

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