

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5883, 2N5884 PNP
2N5885, 2N5886 NPN

COMPLEMENTARY SILICON
POWER TRANSISTORS

JEDEC TO-3 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5883, 2N5884, 2N5885, 2N5886 types are Complementary Silicon Epitaxial Base Transistors designed for power amplifier and switching applications.

MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)

	SYMBOL	2N5883 2N5885	2N5884 2N5886	UNITS
Collector-Base Voltage	V_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CEO}	60	80	V
Emitter-Base Voltage	V_{EBO}	5.0	5.0	V
Collector Current	I_C	25	25	A
Peak Collector Current	I_{CM}	50	50	A
Base Current	I_B	7.5	7.5	A
Power Dissipation	P_D	200	200	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Thermal Resistance	θ_{JC}	0.875		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5883 2N5885		2N5884 2N5886		UNITS
		MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB} = 60\text{V}$		1.0		-	mA
I_{CBO}	$V_{CB} = 80\text{V}$		-		1.0	mA
I_{CEO}	$V_{CE} = 30\text{V}$		2.0		-	mA
I_{CEO}	$V_{CE} = 40\text{V}$		-		2.0	mA
I_{CEX}	$V_{CE} = 60\text{V}, V_{BE} = 1.5\text{V}$		1.0		-	mA
I_{CEX}	$V_{CE} = 80\text{V}, V_{BE} = 1.5\text{V}$		-		1.0	mA
I_{CEX}	$V_{CE} = 60\text{V}, V_{BE} = 1.5\text{V}, T_C = 150^\circ\text{C}$		10		-	mA
I_{CEX}	$V_{CE} = 80\text{V}, V_{BE} = 1.5\text{V}, T_C = 150^\circ\text{C}$		-		10	mA
I_{EBO}	$V_{BE} = 5.0\text{V}$		1.0		1.0	mA
BV_{CEO}	$I_C = 200\text{mA}$	60		80		V
$V_{CE(SAT)}$	$I_C = 15\text{A}, I_B = 1.5\text{A}$		1.0		1.0	V
$V_{CE(SAT)}$	$I_C = 25\text{A}, I_B = 6.25\text{A}$		4.0		4.0	V
$V_{BE(SAT)}$	$I_C = 25\text{A}, I_B = 6.25\text{A}$		2.5		2.5	V
$V_{BE(ON)}$	$V_{CE} = 4.0\text{V}, I_C = 10\text{A}$		1.5		1.5	V

(Continued on Reverse Side)

ELECTRICAL CHARACTERISTICS (Continued)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>2N5883</u> <u>2N5885</u>		<u>2N5884</u> <u>2N5886</u>		<u>UNITS</u>
		<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	
h_{FE}	$V_{CE} = 4.0V, I_C = 3.0A$	35		35		
h_{FE}	$V_{CE} = 4.0V, I_C = 10A$	20	100	20	100	
h_{FE}	$V_{CE} = 4.0V, I_C = 25A$	4.0		4.0		
f_T	$V_{CE} = 10V, I_C = 1.0A, f = 1.0MHz$	4.0		4.0		MHz
C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$		1000		-	pF
C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1.0MHz$		-		500	pF
h_{fe}	$V_{CE} = 4.0V, I_C = 3.0A, f = 1.0kHz$	20		20		
t_r	$V_{CC} = 10V, I_C = 10A, I_{B1} = I_{B2} = 1.0A$		0.7		0.7	μs
t_s	$V_{CC} = 10V, I_C = 10A, I_{B1} = I_{B2} = 1.0A$		1.0		1.0	μs
t_f	$V_{CC} = 10V, I_C = 10A, I_{B1} = I_{B2} = 1.0A$		0.8		0.8	μs

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