

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

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°C)

	SYMBOL	2N5883	2N5884	UNITS
		2N5885	2N5886	
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		°C
Thermal Resistance	θ _{JC}	0.875		°C/W

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

SYMBOL	TEST CONDITIONS	2N5883 2N5885		2N5884 2N5886		UNITS
		MIN	MAX	MIN	MAX	
I _{CBO}	V _{CB} = 60V		1.0	-		mA
I _{CBO}	V _{CB} = 80V		-	1.0		mA
I _{CEO}	V _{CE} = 30V		2.0	-		mA
I _{CEO}	V _{CE} = 40V		-	2.0		mA
I _{CEX}	V _{CE} = 60V, V _{BE} = 1.5V		1.0	-		mA
I _{CEX}	V _{CE} = 80V, V _{BE} = 1.5V		-	1.0		mA
I _{CEX}	V _{CE} = 60V, V _{BE} = 1.5V, T _C = 150°C		10	-		mA
I _{CEX}	V _{CE} = 80V, V _{BE} = 1.5V, T _C = 150°C		-	10		mA
I _{EBO}	V _{BE} = 5.0V		1.0	1.0		mA
BV _{CEO}	I _C = 200mA	60		80		V
V _{CE(SAT)}	I _C = 15A, I _B = 1.5A		1.0	1.0		V
V _{CE(SAT)}	I _C = 25A, I _B = 6.25A		4.0	4.0		V
V _{BE(SAT)}	I _C = 25A, I _B = 6.25A		2.5	2.5		V
V _{BE(ON)}	V _{CE} = 4.0V, I _C = 10A		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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www.centrasemi.com