

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5303

NPN SILICON
POWER TRANSISTOR

JEDEC TO-3 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5303 type is a NPN Silicon Epitaxial Planar Transistors designed for power amplifier and switching applications.

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

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	V_{CB0}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Collector Current	I_C	20	A
Base Current	I_B	7.5	A
Power Dissipation	P_D	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)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
I_{CBO}	$V_{CB} = 80\text{V}$		1.0	mA
I_{CEO}	$V_{CE} = 80\text{V}$		5.0	mA
I_{CEX}	$V_{CE} = 80\text{V}, V_{BE} = 1.5\text{V}$		1.0	mA
I_{CEX}	$V_{CE} = 80\text{V}, V_{BE} = 1.5\text{V}, T_C = 150^\circ\text{C}$		10	mA
I_{EBO}	$V_{BE} = 5.0\text{V}$		5.0	mA
BV_{CEO}	$I_C = 200\text{mA}$	80		V
$V_{CE(SAT)}$	$I_C = 10\text{A}, I_B = 1.0\text{A}$		1.0	V
$V_{CE(SAT)}$	$I_C = 15\text{A}, I_B = 1.5\text{A}$		1.5	V
$V_{CE(SAT)}$	$I_C = 20\text{A}, I_B = 4.0\text{A}$		2.0	V
$V_{BE(SAT)}$	$I_C = 10\text{A}, I_B = 1.0\text{A}$		1.7	V
$V_{BE(SAT)}$	$I_C = 15\text{A}, I_B = 1.5\text{A}$		2.0	V
$V_{BE(SAT)}$	$I_C = 20\text{A}, I_B = 4.0\text{A}$		2.5	V
$V_{BE(ON)}$	$V_{CE} = 2.0\text{V}, I_C = 10\text{A}$		1.5	V
$V_{BE(ON)}$	$V_{CE} = 4.0\text{V}, I_C = 20\text{A}$		2.5	V

(Continued on Reverse Side)

ELECTRICAL CHARACTERISTICS (Continued)

SYMBOL	TEST CONDITIONS	MIN	MAX	Units
h_{FE}	$V_{CE}=2.0V, I_C=1.0A$	40		
h_{FE}	$V_{CE}=2.0V, I_C=10A$	15	60	
h_{FE}	$V_{CE}=4.0V, I_C=20A$	5.0		
f_T	$V_{CE}=10V, I_C=1.0A, f=1.0MHz$	2.0		MHz
h_{fe}	$V_{CE}=10V, I_C=1.0A, f=1.0kHz$	40		
t_r	$V_{CC}=30V, I_C=10A, I_{B1}=I_{B2}=1.0A$		1.0	μs
t_s	$V_{CC}=30V, I_C=10A, I_{B1}=I_{B2}=1.0A$		2.0	μs
t_f	$V_{CC}=30V, I_C=10A, I_{B1}=I_{B2}=1.0A$		1.0	μs

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- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

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