Data Sheet

Central™ 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 ($T_C=25^oC$)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	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	^oC
Thermal Resistance	Θ_{JC}	0.875	$^oC/W$

ELECTRICAL CHARACTERISTICS ($T_C=25^oC$ unless otherwise noted)

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