

CentralTM Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N5781 PNP

2N5784 NPN

COMPLEMENTARY SILICON
POWER TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5781, 2N5784 types are Complementary Silicon Power Transistors designed for general purpose switching and amplifier applications.

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

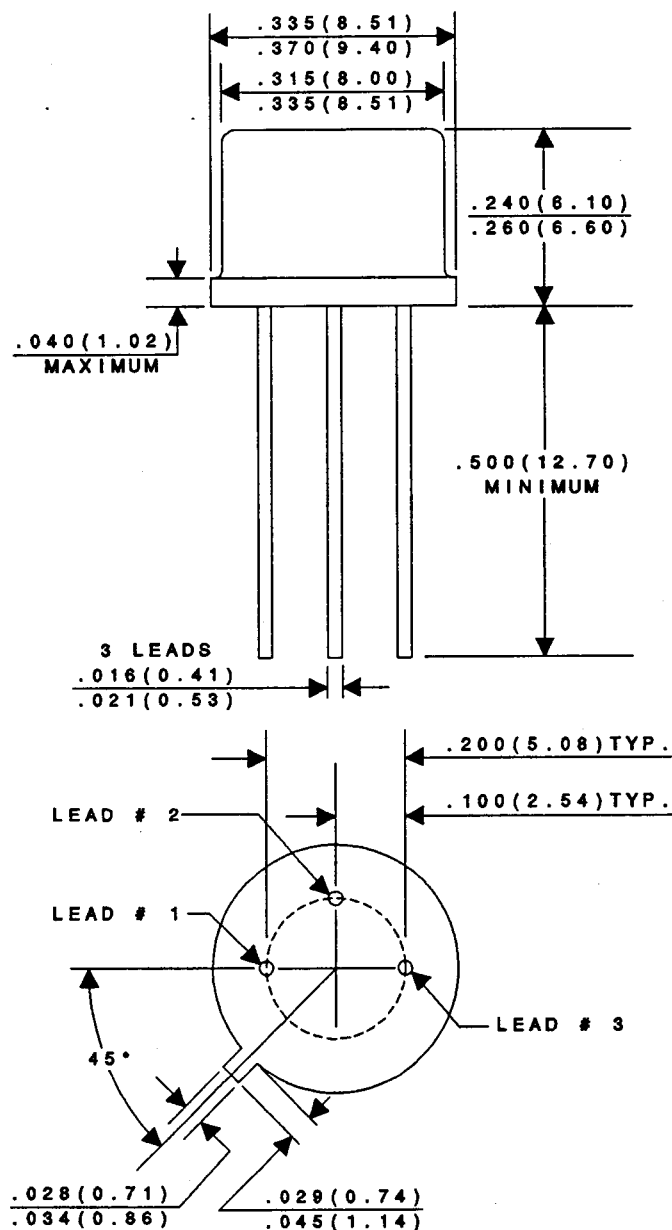
	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CER}	80	V
Collector-Emitter Voltage	V_{CEO}	65	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	3.5	A
Base Current	I_B	1.0	A
Power Dissipation	P_D	10	W
Power Dissipation ($T_A=25^\circ\text{C}$)	P_D	1.0	W
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance	θ_{JC}	17.5	$^\circ\text{C/W}$
Thermal Resistance	θ_{JA}	175	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEV}	$V_{CE}=75\text{V}, V_{BE(\text{off})}=1.5\text{V}$		10	μA
I_{CEV}	$V_{CE}=75\text{V}, V_{BE(\text{off})}=1.5\text{V}, T_C=150^\circ\text{C}$		1.0	mA
I_{CER}	$V_{CE}=65\text{V}, R_{BE}=100\Omega$		10	μA
I_{CER}	$V_{CE}=65\text{V}, R_{BE}=100\Omega, T_C=150^\circ\text{C}$		1.0	mA
I_{CEO}	$V_{CE}=50\text{V}$		100	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		10	μA
BV_{CER}	$I_C=10\text{mA}, R_{BE}=100\Omega$	80		V
BV_{CEO}	$I_C=10\text{mA}$	65		V
$V_{CE(\text{SAT})}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		0.5	V
$V_{BE(\text{ON})}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$		1.5	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	20	100	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=3.2\text{A}$	4.0		
f_T	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=4.0\text{MHz}$ (2N5781)	8.0	60	MHz
f_T	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=200\text{kHz}$ (2N5784)	1.0	4.0	MHz
h_{fe}	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=1.0\text{kHz}$	25		
t_{ON}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5781)		0.5	μs
t_{ON}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5784)		5.0	μs
t_{OFF}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5781)		2.5	μs
t_{OFF}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5784)		15	μs

(SEE REVERSE SIDE)

JEDEC TO-39 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

Lead Code:

1. Emitter
2. Base
3. Collector

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