

# Central<sup>TM</sup> Semiconductor Corp.

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

Manufacturers of World Class Discrete Semiconductors

2N5783 PNP  
2N5786 NPN

COMPLEMENTARY SILICON  
POWER TRANSISTOR

JEDEC TO-39 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5783, 2N5786 types are Complementary Silicon Power Transistors designed for general purpose switching and amplifier applications.

## MAXIMUM RATINGS (T<sub>C</sub>=25°C)

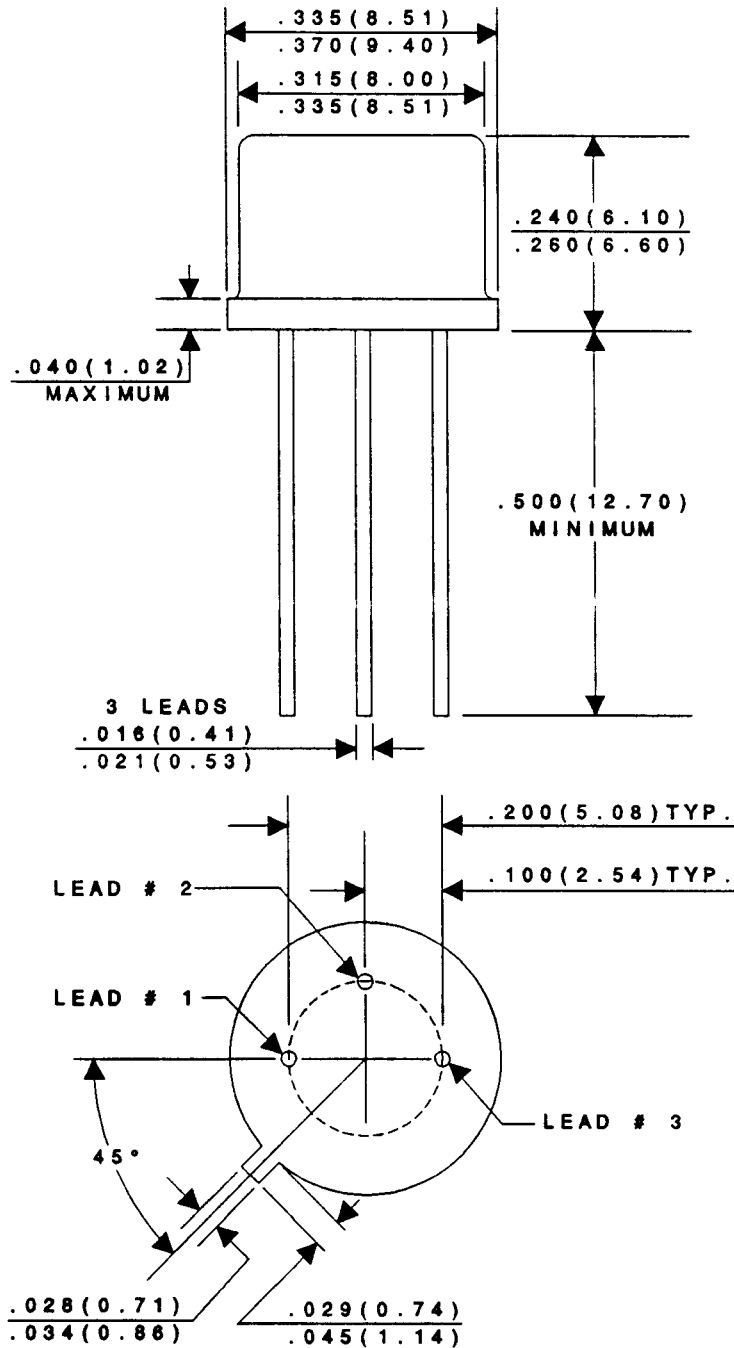
	SYMBOL		UNITS
Collector-Base Voltage	V <sub>CB0</sub>	45	V
Collector-Emitter Voltage	V <sub>CER</sub>	45	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	V
Emitter-Base Voltage	V <sub>EBO</sub>	3.5	V
Collector Current	I <sub>C</sub>	3.5	A
Base Current	I <sub>B</sub>	1.0	A
Power Dissipation	P <sub>D</sub>	10	W
Power Dissipation (T <sub>A</sub> =25°C)	P <sub>D</sub>	1.0	W
Operating and Storage			
Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200	°C
Thermal Resistance	θ <sub>JC</sub>	17.5	°C/W
Thermal Resistance	θ <sub>JA</sub>	175	°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I <sub>CEV</sub>	V <sub>CE</sub> =45V, V <sub>BE(off)</sub> =1.5V		10	μA
I <sub>CEV</sub>	V <sub>CE</sub> =45V, V <sub>BE(off)</sub> =1.5V, T <sub>C</sub> =150°C		1.0	mA
I <sub>CER</sub>	V <sub>CE</sub> =40V, R <sub>BE</sub> =100Ω		10	μA
I <sub>CER</sub>	V <sub>CE</sub> =40V, R <sub>BE</sub> =100Ω, T <sub>C</sub> =150°C		1.0	mA
I <sub>CEO</sub>	V <sub>CE</sub> =25V		100	μA
I <sub>EBO</sub>	V <sub>EB</sub> =3.5V		10	μA
BV <sub>CER</sub>	I <sub>C</sub> =10mA, R <sub>BE</sub> =100Ω	45		V
BV <sub>CEO</sub>	I <sub>C</sub> =10mA	40		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =1.6A, I <sub>B</sub> =160mA		1.0	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =3.2A, I <sub>B</sub> =800mA		2.0	V
V <sub>BE(ON)</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =1.6A		1.5	V
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =1.6A	20	100	
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =3.2A	4.0		
f <sub>T</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =100mA, f=4.0MHz (2N5783)	8.0	60	MHz
f <sub>T</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =100mA, f=200kHz (2N5786)	1.0	4.0	MHz
h <sub>fe</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =100mA, f=1.0kHz	25		
t <sub>ON</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =1.0A, I <sub>B1</sub> =I <sub>B2</sub> =100mA (2N5783)		0.5	μs
t <sub>ON</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =1.0A, I <sub>B1</sub> =I <sub>B2</sub> =100mA (2N5786)		5.0	μs
t <sub>OFF</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =1.0A, I <sub>B1</sub> =I <sub>B2</sub> =100mA (2N5783)		2.5	μs
t <sub>OFF</sub>	V <sub>CC</sub> =30V, I <sub>C</sub> =1.0A, I <sub>B1</sub> =I <sub>B2</sub> =100mA (2N5786)		15	μs

(SEE REVERSE SIDE)

# JEDEC TO-39 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

LEAD CODE:

- 1) EMITTER
- 2) BASE
- 3) COLLECTOR