

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

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Manufacturers of World Class Discrete Semiconductors

2N3738  
2N3739

NPN SILICON  
POWER TRANSISTOR

JEDEC TO-66 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3738, 2N3739 types are NPN Silicon Epitaxial Power Transistors designed for high voltage amplifier applications.

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

	SYMBOL	2N3738	2N3739	UNITS
Collector-Base Voltage	V <sub>CB0</sub>	250	325	V
Collector-Emitter Voltage	V <sub>CEO</sub>	225	300	V
Emitter-Base Voltage	V <sub>EBO</sub>		6.0	V
Continuous Collector Current	I <sub>C</sub>		1.0	A
Peak Collector Current	I <sub>CM</sub>		2.0	A
Continuous Base Current	I <sub>B</sub>		0.5	A
Peak Base Current	I <sub>BM</sub>		1.0	A
Power Dissipation	P <sub>D</sub>		20	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200		°C
Thermal Resistance	Θ <sub>JC</sub>		7.5	°C/W

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

SYMBOL	TEST CONDITIONS	2N3738		2N3739		UNITS
		MIN	MAX	MIN	MAX	
I <sub>CBO</sub>	V <sub>CB</sub> = 250V		0.1	-		mA
I <sub>CBO</sub>	V <sub>CB</sub> = 325V		-	0.1		mA
I <sub>CEV</sub>	V <sub>CE</sub> = 250V, V <sub>EB(off)</sub> = 1.5V		0.5	-		mA
I <sub>CEV</sub>	V <sub>CE</sub> = 300V, V <sub>EB(off)</sub> = 1.5V		-	0.5		mA
I <sub>CEV</sub>	V <sub>CB</sub> = 125V, V <sub>EB(off)</sub> = 1.5V, T <sub>C</sub> = 100°C		1.0	-		mA
I <sub>CEV</sub>	V <sub>CB</sub> = 200V, V <sub>EB(off)</sub> = 1.5V, T <sub>C</sub> = 100°C		-	1.0		mA
I <sub>CEO</sub>	V <sub>CB</sub> = 125V		0.25	-		mA
I <sub>CEO</sub>	V <sub>CB</sub> = 200V		-	0.25		mA
I <sub>EBO</sub>	V <sub>EB</sub> = 6.0V		0.1	0.1		mA
BV <sub>CEO</sub>	I <sub>C</sub> = 5.0mA	225		300		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> = 250mA, I <sub>B</sub> = 25mA		2.5		2.5	V
V <sub>BE(ON)</sub>	V <sub>CE</sub> = 10V, I <sub>C</sub> = 100mA		1.0		1.0	V

(Continued on Reverse Side)

ELECTRICAL CHARACTERISTICS (Continued)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>
$h_{FE}$	$V_{CE} = 10V, I_C = 50mA$	30	
$h_{FE}$	$V_{CE} = 10V, I_C = 100mA$	40	200
$h_{FE}$	$V_{CE} = 10V, I_C = 250mA$	25	
$f_T$	$V_{CE} = 10V, I_C = 100mA, f = 10MHz$	10	
$C_{ob}$	$V_{CB} = 100V, I_E = 0, f = 100kHz$		20
$h_{fe}$	$V_{CE} = 20V, I_C = 100mA, f = 1.0kHz$	35	

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