

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

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Manufacturers of World Class Discrete Semiconductors

CEN-U10

NPN SILICON POWER TRANSISTOR

JEDEC TO-202 CASE (EBC)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CEN-U10 type is a NPN Silicon Power Transistor designed for high voltage amplifier applications. This device is an electrical equivalent to Motorola's MPSU10.

## MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	$V_{CB0}$	300	V
Collector-Emitter Voltage	$V_{CEO}$	300	V
Emitter-Base Voltage	$V_{EBO}$	6.0	V
Collector Current	$I_C$	0.5	A
Power Dissipation	$P_D$	1.75	W
Power Dissipation ( $T_C = 25^\circ\text{C}$ )	$P_D$	10	W
Operating and Storage			
Junction Temperature	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$	70	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$	12.5	$^\circ\text{C/W}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
$I_{CBO}$	$V_{CB} = 200\text{V}$		0.2	$\mu\text{A}$
$I_{EBO}$	$V_{BE} = 6.0\text{V}$		0.1	$\mu\text{A}$
$BV_{CB0}$	$I_C = 100\mu\text{A}$	300		V
$BV_{CEO}$	$I_C = 1.0\text{mA}$	300		V
$BV_{EBO}$	$I_E = 100\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C = 20\text{mA}, I_B = 2.0\text{mA}$		1.50	V
$V_{BE(SAT)}$	$I_C = 20\text{mA}, I_B = 2.0\text{mA}$		0.80	V
$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 1.0\text{mA}$	25		
$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	40		
$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 30\text{mA}$	40		
$f_T$	$V_{CE} = 20\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$	45		MHz
$C_{ob}$	$V_{CB} = 20\text{V}, I_E = 0, f = 1.0\text{MHz}$		3.0	pF



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