

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

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Manufacturers of World Class Discrete Semiconductors

MPSA44  
MPSA45

NPN SILICON TRANSISTOR  
HIGH VOLTAGE

JEDEC TO-92 CASE (EBC)

## DESCRIPTION

The CENTRAL SEMICONDUCTOR MPSA44 series types are silicon NPN transistors designed for extremely high voltage applications.

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

	SYMBOL	MPSA44	MPSA45	UNIT
Collector-Base Voltage	$V_{CBO}$	500	400	V
Collector-Emitter Voltage	$V_{CEO}$	400	350	V
Emitter-Base Voltage	$V_{EBO}$	6.0	6.0	V
Collector Current	$I_C$		300	mA
Power Dissipation	$P_D$		625	mW
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$		1.5	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		200	$^\circ\text{C}/\text{W}$
Thermal Resistance	$\theta_{JC}$		83.3	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MPSA44		MPSA45		UNIT
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=400\text{V}$		0.1	-		$\mu\text{A}$
$I_{CBO}$	$V_{CB}=320\text{V}$		-	0.1		$\mu\text{A}$
$I_{CES}$	$V_{CE}=400\text{V}$		500	-		nA
$I_{CES}$	$V_{CE}=320\text{V}$		-	500		nA
$I_{EBO}$	$V_{EB}=4.0\text{V}$		0.1	0.1		$\mu\text{A}$
$BV_{CBO}$	$I_C=100\mu\text{A}$	500		400		V
$BV_{CES}$	$I_C=100\mu\text{A}$	500		400		V
$BV_{CEO}$	$I_C=1.0\text{mA}$	400		350		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		6.0		V
$V_{CE(SAT)}$	$I_C=1.0\text{mA}, I_B=0.1\text{mA}$		0.4		0.4	V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.5		0.5	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.75		0.75	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_C=1.0\text{mA}$		0.75		0.75	V
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	40		40		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	50	200	50	200	
$h_{FE}$	$V_{CE}=10\text{V}, I_C=50\text{mA}$	45		45		
$h_{FE}$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	40		40		
$f_T$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=10\text{MHz}$	20		20		MHz
$C_{ob}$	$V_{CB}=20\text{V}, I_E=0, f=1.0\text{MHz}$		6.0		6.0	pF
$C_{ib}$	$V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		110		110	pF