

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

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Manufacturers of World Class Discrete Semiconductors

MPS650 MPS651 NPN TO-92 EBC  
MPS750 MPS751 PNP TO-92 EBC  
CENW650 CENW651 NPN TO-237 EBC  
CENW750 CENW751 PNP TO-237 EBC

COMPLEMENTARY SILICON SMALL  
SIGNAL TRANSISTORS

## DESCRIPTION

The CENTRAL SEMICONDUCTOR MPS/CENW650, MPS/CENW750 series types are complementary silicon transistors mounted in an epoxy case and designed for general purpose amplifier and switching application requiring high gain at a high collector current.

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

	SYMBOL	MPS650 CENW650	MPS651 CENW651	MPS750 CENW750	MPS751 CENW751	UNIT
Collector-Base Voltage	$V_{CB0}$	60	80	60	80	V
Collector-Emitter Voltage	$V_{CE0}$	40	60	40	60	V
Emitter-Base Voltage	$V_{EB0}$	5.0	5.0	5.0	5.0	V
Collector Current	$I_C$	2.0	2.0	2.0	2.0	A
Power Dissipation (TO-92 case)	$P_D$	625	625	625	625	mW
Power Dissipation (TO-237 case)	$P_D$	1.0	1.0	1.0	1.0	W
Power Dissipation ( $T_C=25^\circ\text{C}$ ) (TO-92 case)	$P_D$	1.5	1.5	1.5	1.5	W
Power Dissipation ( $T_C=25^\circ\text{C}$ ) (TO-237 case)	$P_D$	2.5	2.5	2.5	2.5	W
Operating and Storage						
Junction Temperature	$T_J, T_{STG}$			-65 TO +150		$^\circ\text{C}$
Thermal Resistance (TO-92 case)	$\theta_{JA}$			200		$^\circ\text{C/W}$
Thermal Resistance (TO-237 case)	$\theta_{JA}$			125		$^\circ\text{C/W}$
Thermal Resistance (TO-92 case)	$\theta_{JC}$			83.3		$^\circ\text{C/W}$
Thermal Resistance (TO-237 case)	$\theta_{JC}$			50		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MPS/CENW650		MPS/CENW651		UNIT
		MIN	MAX	MIN	MAX	
$I_{CB0}$	$V_{CB}=60\text{V}$		0.1	-		$\mu\text{A}$
$I_{CB0}$	$V_{CB}=80\text{V}$		-	0.1		$\mu\text{A}$
$I_{EB0}$	$V_{EB}=4.0\text{V}$		0.1	0.1		$\mu\text{A}$
$BV_{CB0}$	$I_C=100\mu\text{A}$	60		80		V
$BV_{CE0}$	$I_C=10\text{mA}$	40		60		V
$BV_{EB0}$	$I_E=10\mu\text{A}$	5.0		5.0		V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		0.3		0.3	V
$V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$		0.5		0.5	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$		1.0		1.0	V
$V_{BE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		1.2		1.2	V
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=50\text{mA}$	75		75		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	75		75		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	75		75		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=2.0\text{A}$	40		40		
$f_T$	$V_{CE}=5.0\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	75		75		MHz