

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

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Manufacturers of World Class Discrete Semiconductors

TIP110 TIP111 TIP112 NPN  
TIP115 TIP116 TIP117 PNPSILICON POWER DARLINGTON  
COMPLEMENTARY TRANSISTORS

JEDEC TO-220 AB CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP110, TIP115 series types are Complementary Silicon Power Darlington Transistors designed low speed switching and amplifier applications.

MAXIMUM RATINGS ( $T_C = 25^\circ\text{C}$ )

	<u>SYMBOL</u>	TIP110 TIP115	TIP111 TIP116	TIP112 TIP117	<u>UNITS</u>
Collector-Base Voltage	$V_{CB0}$	60	80	100	V
Collector-Emitter Voltage	$V_{CEO}$	80	80	100	V
Emitter-Base Voltage	$V_{EBO}$	5.0	5.0	5.0	V
Collector Current	$I_C$		2.0		A
Collector Current (Peak)	$I_{CM}$		4.0		A
Base Current	$I_B$		50		mA
Power Dissipation	$P_D$		50		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$		2.5		$^\circ\text{C/W}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	TIP110 TIP115		TIP111 TIP116		TIP112 TIP117		<u>UNITS</u>
		MIN	MAX	MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB} = 60\text{V}$		1.0		-		-	mA
$I_{CBO}$	$V_{CB} = 80\text{V}$		-		1.0		-	mA
$I_{CBO}$	$V_{CB} = 100\text{V}$		-		-		1.0	mA
$I_{CEO}$	$V_{CE} = 30\text{V}$		2.0		-		-	mA
$I_{CEO}$	$V_{CE} = 40\text{V}$		-		2.0		-	mA
$I_{CEO}$	$V_{CE} = 50\text{V}$		-		-		2.0	mA
$I_{EBO}$	$V_{BE} = 5.0\text{V}$		2.0		2.0		2.0	mA
$BV_{CEO}$	$I_C = 30\text{mA}$	60		80		100		V
$V_{CE(SAT)}$	$I_C = 2.0\text{A}, I_B = 8.0\text{mA}$		2.5		2.5		2.5	V
$V_{BE(ON)}$	$V_{CE} = 4.0\text{V}, I_C = 2.0\text{A}$		2.8		2.8		2.8	V
$h_{FE}$	$V_{CE} = 4.0\text{V}, I_C = 1.0\text{A}$	1000		1000		1000		
$h_{FE}$	$V_{CE} = 4.0\text{V}, I_C = 2.0\text{A}$	500		500		500		
$f_T$	$V_{CE} = 10\text{V}, I_C = 750\text{mA}, f = 1.0\text{MHz}$	25		25		25		MHz

(Continued on reverse side)

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

		<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$ TIP110, TIP111, TIP112		100	pF
$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$ TIP115, TIP116, TIP117		200	pF

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