

CentralTM 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>	<u>TIP110</u> <u>TIP115</u>	<u>TIP111</u> <u>TIP116</u>	<u>TIP112</u> <u>TIP117</u>	<u>UNITS</u>
Collector-Base Voltage	V_{CBO}	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	θ_{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>	<u>TIP110</u> <u>TIP115</u>		<u>TIP111</u> <u>TIP116</u>		<u>TIP112</u> <u>TIP117</u>		<u>UNITS</u>
		<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	
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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