

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

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Manufacturers of World Class Discrete Semiconductors

TIP120 TIP121 TIP122 NPN  
TIP125 TIP126 TIP127 PNP

SILICON POWER DARLINGTON  
COMPLEMENTARY TRANSISTORS

JEDEC TO-220 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR TIP120, TIP125 series types are Complementary Silicon Power Darlington Transistors designed for low speed switching and amplifier applications.

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

	SYMBOL	TIP120 TIP125	TIP121 TIP126	TIP122 TIP127	UNITS
Collector-Base Voltage	$V_{CBO}$	60	80	100	V
Collector-Emitter Voltage	$V_{CEO}$	60	80	100	V
Emitter-Base Voltage	$V_{EBO}$	5.0	5.0	5.0	V
Collector Current	$I_C$		5.0		A
Collector Current (Peak)	$I_{CM}$		8.0		A
Base Current	$I_B$		120		mA
Power Dissipation	$P_D$		65		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150		$^{\circ}\text{C}$
Thermal Resistance	$\theta_{JC}$		1.92		$^{\circ}\text{C}/\text{W}$

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

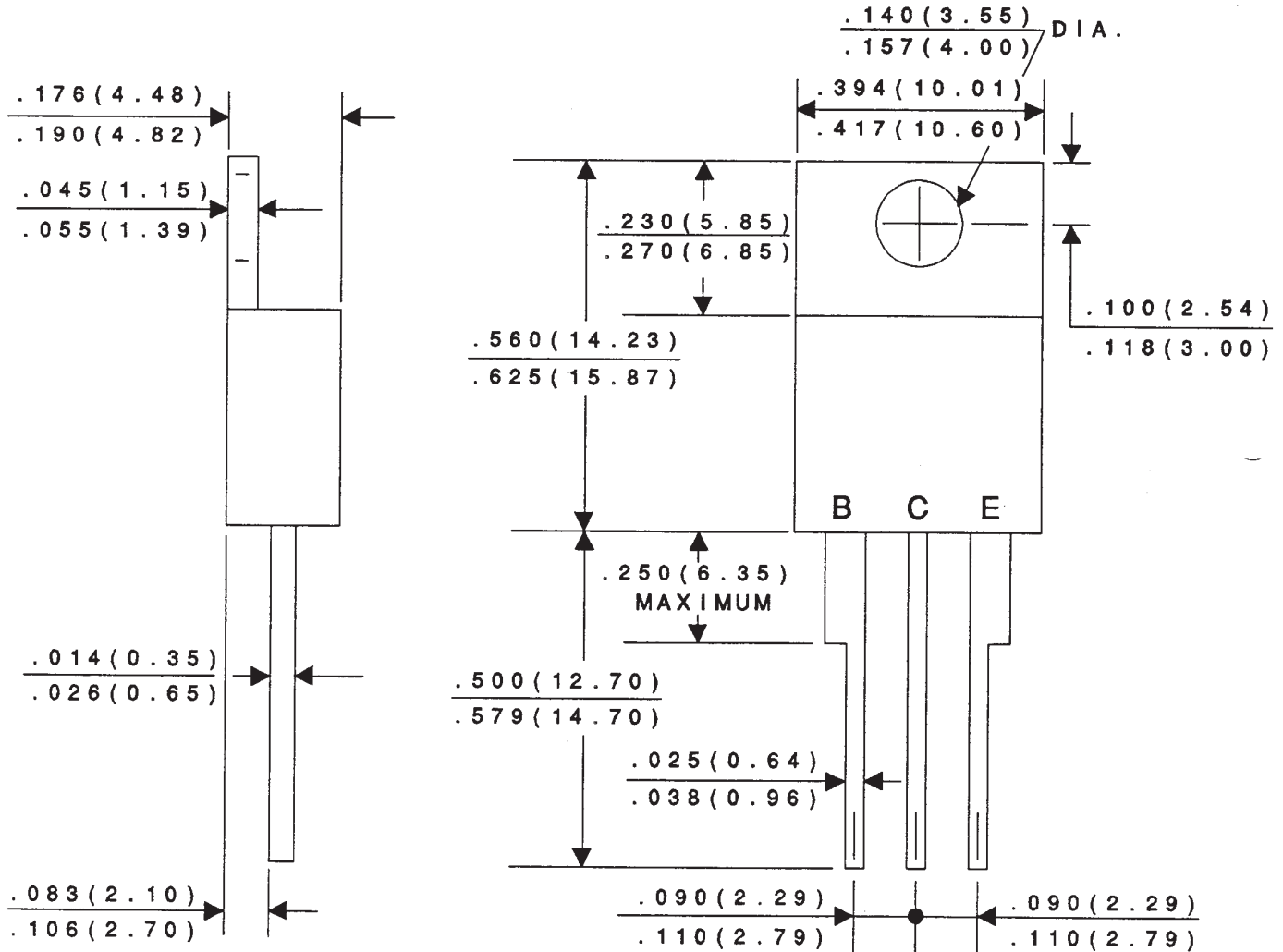
SYMBOL	TEST CONDITIONS	TIP120 TIP125		TIP121 TIP126		TIP122 TIP127		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=60\text{V}$		0.2		-		-	mA
$I_{CBO}$	$V_{CB}=80\text{V}$		-		0.2		-	mA
$I_{CBO}$	$V_{CB}=100\text{V}$		-		-		0.2	mA
$I_{CEO}$	$V_{CE}=30\text{V}$		0.5		-		-	mA
$I_{CEO}$	$V_{CE}=40\text{V}$		-		0.5		-	mA
$I_{CEO}$	$V_{CE}=50\text{V}$		-		-		0.5	mA
$I_{EBO}$	$V_{BE}=5.0\text{V}$		2.0		2.0		2.0	mA
$BV_{CEO}$	$I_C=100\text{mA}$	60		80		100		V
$V_{CE(SAT)}$	$I_C=3.0\text{A}, I_B=12\text{mA}$		2.0		2.0		2.0	V
$V_{CE(SAT)}$	$I_C=5.0\text{A}, I_B=20\text{mA}$		4.0		4.0		4.0	V
$V_{BE(ON)}$	$V_{CE}=3.0\text{V}, I_C=3.0\text{A}$		2.5		2.5		2.5	V
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=0.5\text{A}$	1000		1000		1000		
$h_{FE}$	$V_{CE}=3.0\text{V}, I_C=3.0\text{A}$	1000		1000		1000		
$f_T$	$V_{CE}=4.0\text{V}, I_C=3.0\text{A}, f=1.0\text{MHz}$	4.0		4.0		4.0		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>
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ TIP120, TIP121, TIP122		200	pF
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$ TIP125, TIP126, TIP127		300	pF

JEDEC TO-220 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

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