

CentralTM 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	θ_{JC}		1.92		$^\circ\text{C/W}$

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

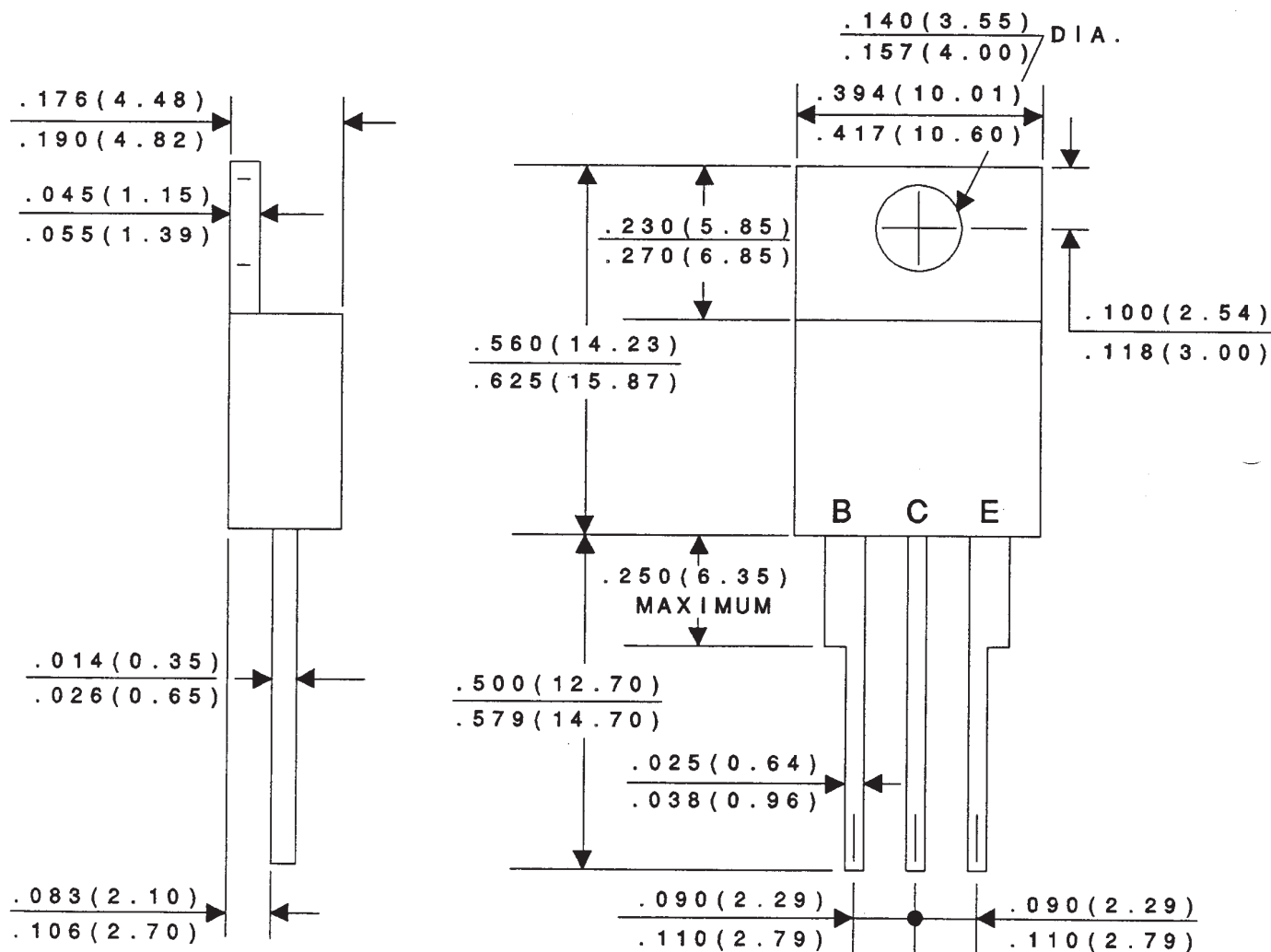
SYMBOL	TEST CONDITIONS	TIP120 TIP125		TIP121 TIP126		TIP122 TIP127		UNITS
		MIN	MAX	MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB}=60\text{V}$		0.2		-		-	mA
I_{CBO}	$V_{CB}=80\text{V}$		-		0.2		-	mA
I_{CBO}	$V_{CB}=100\text{V}$		-		-		0.2	mA
I_{CEO}	$V_{CE}=30\text{V}$		0.5		-		-	mA
I_{CEO}	$V_{CE}=40\text{V}$		-		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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