#### CMPTA14E

# ENHANCED SPECIFICATION SURFACE MOUNT NPN SILICON DARLINGTON TRANSISTOR





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## **DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPTA14E is an Enhanced version of the CMPTA14 NPN Darlington Transistor. This device is manufactured by the epitaxial planar process, epoxy molded in a surface mount SOT-23 package, designed for applications requiring extremely high gain.

## **MARKING CODE: C1NE**

## **FEATURED ENHANCED SPECIFICATIONS:**

- ♦ BVCBO from 30V min to 40V min.
- ♦ V<sub>CE(SAT)</sub> from 1.5V max to 1.0V max.
- ♦ h<sub>FE</sub> from 10K min to 30K min.

MAXIMUM RATINGS: (T <sub>A</sub> =25°C)	SYMBOL		UNITS	
♦ Collector-Base Voltage	V <sub>CBO</sub>	40	V	
♦ Collector-Emitter Voltage	V <sub>CES</sub>	40	V	
Emitter-Base Voltage	$V_{EBO}$	10	V	
Continuous Collector Current	$I_{\mathbb{C}}$	500	mA	
Power Dissipation	$P_{D}$	350	mW	
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150	°C	
Thermal Resistance	Θ.ΙΔ	357	°C/W	

## **ELECTRICAL CHARACTERISTICS:** (T<sub>A</sub>=25 °C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
♦ I <sub>CBO</sub>	V <sub>CB</sub> =40V			100	nA
I <sub>EBO</sub>	V <sub>EB</sub> =10V			100	nA
♦ BV <sub>CES</sub>	I <sub>C</sub> =100μA	40	60		V
♦ V <sub>CE(SAT)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =0.1mA		0.75	1.0	V
V <sub>BE(ON)</sub>	$V_{CE}$ =5.0V, $I_{C}$ =100mA			2.0	V
♦ h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA	30,000	70,000		
♦ h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =100mA	40,000	75,000		
♦♦ h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =500mA	10,000	35,000		
$f_T$	$V_{CE}$ =5.0V, $I_{C}$ =10mA, f=100MHz	125			MHz

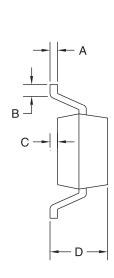
- ◆ Enhanced specification
- ♦ ♦ Additional Enhanced specification

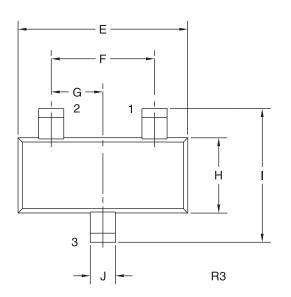
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# **SOT-23 CASE - MECHANICAL OUTLINE**





# LEAD CODE:

- 1) Base 2) Emitter
- 3) Collector

MARKING CODE: C1NE

DIMENSIONS							
	INCHES		MILLIMETERS				
SYMBOL	MIN	MAX	MIN	MAX			
Α	0.003	0.007	0.08	0.18			
В	0.006	-	0.15	-			
С	-	0.005	-	0.13			
D	0.035	0.043	0.89	1.09			
Е	0.110	0.120	2.80	3.05			
F	0.075		1.90				
G	0.037		0.95				
Н	0.047	0.055	1.19	1.40			
I	0.083	0.098	2.10	2.49			
J	0.014	0.020	0.35	0.50			

SOT-23 (REV: R3)

#### **OUTSTANDING SUPPORT AND SUPERIOR SERVICES**



#### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- · Inventory bonding
- · Consolidated shipping options

- · Custom bar coding for shipments
- · Custom product packing

#### **DESIGNER SUPPORT/SERVICES**

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free guick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- · Custom electrical curves
- · Environmental regulation compliance
- · Customer specific screening
- · Up-screening capabilities

- · Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- · Application and design sample kits
- · Custom product and package development

#### REQUESTING PRODUCT PLATING

- 1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
- 2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

#### **CONTACT US**

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