

CMPTA14E

**ENHANCED SPECIFICATION
SURFACE MOUNT NPN
SILICON DARLINGTON TRANSISTOR**



www.centrasemi.com



SOT-23 CASE

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:

- ◆ V_{CB0} from 30V min to 40V min.
- ◆ $V_{CE(SAT)}$ from 1.5V max to 1.0V max.
- ◆ h_{FE} from 10K min to 30K min.

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

- ◆ Collector-Base Voltage
- ◆ Collector-Emitter Voltage
- Emitter-Base Voltage
- Continuous Collector Current
- Power Dissipation
- Operating and Storage Junction Temperature
- Thermal Resistance

SYMBOL		UNITS
V_{CB0}	40	V
V_{CES}	40	V
V_{EBO}	10	V
I_C	500	mA
P_D	350	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
◆ I_{CBO}	$V_{CB}=40\text{V}$			100	nA
I_{EBO}	$V_{EB}=10\text{V}$			100	nA
◆ BV_{CES}	$I_C=100\mu\text{A}$	40	60		V
◆ $V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=0.1\text{mA}$		0.75	1.0	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$			2.0	V
◆ h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	30,000	70,000		
◆ h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$	40,000	75,000		
◆◆ h_{FE}	$V_{CE}=5.0\text{V}, I_C=500\text{mA}$	10,000	35,000		
f_T	$V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	125			MHz

◆ Enhanced specification

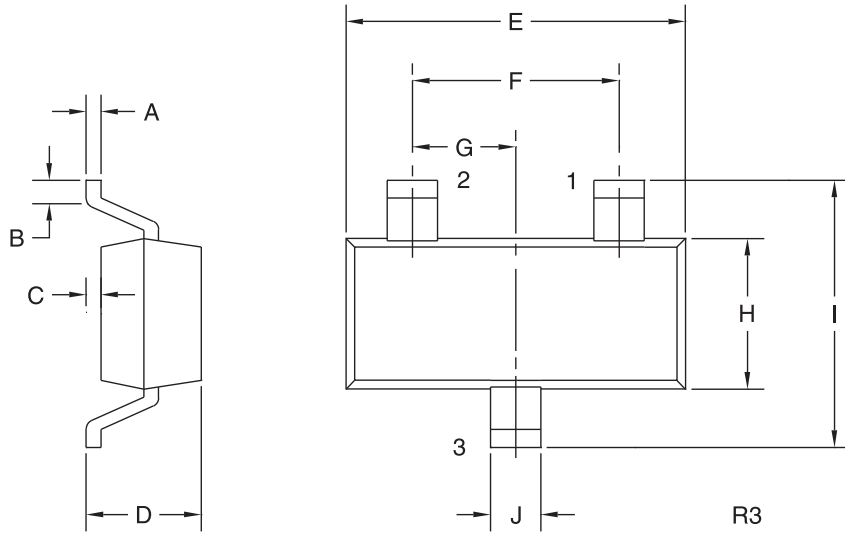
◆◆ Additional Enhanced specification

R5 (1-February 2010)

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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Base
- 2) Emitter
- 3) Collector

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DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	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)

R5 (1-February 2010)