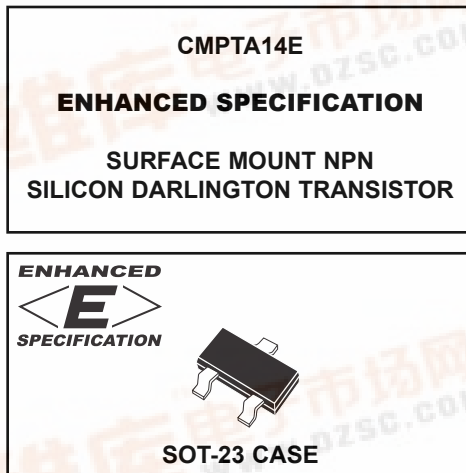




CentralTM Semiconductor Corp.

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:

- ◆ BV_{CBO} 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
- Collector Current
- Power Dissipation
- Operating and Storage
- Junction Temperature
- Thermal Resistance

SYMBOL

V_{CBO}
 V_{CES}
 V_{EBO}
 I_C
 P_D

40
40
10
500
350

UNITS

V
V
V
mA
mW

T_J, T_{stg}
 θ_{JA}

-65 to +150
357

$^\circ\text{C}$
 $^\circ\text{C/W}$

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

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

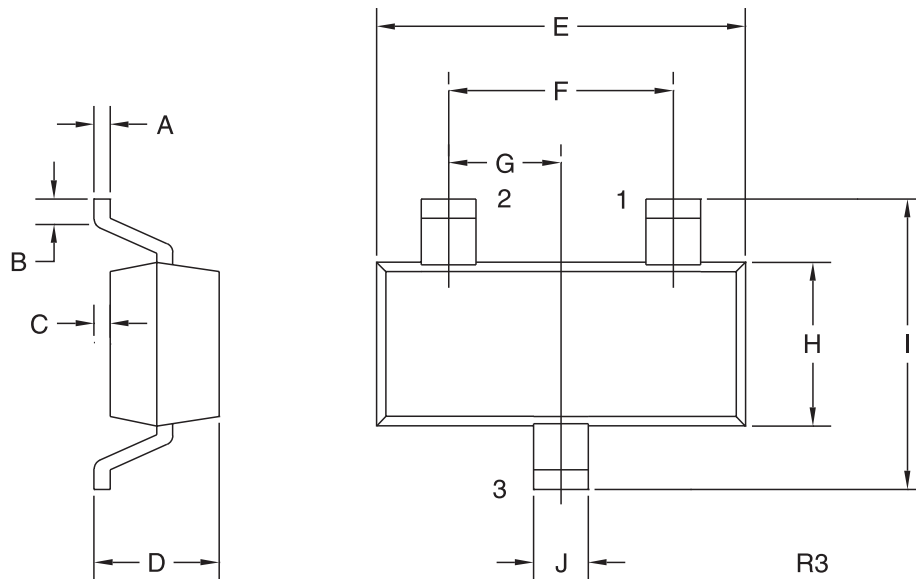
- ◆ Enhanced specification.
- ◆◆ Additional Enhanced specification.

R4 (20-February 2003)

ENHANCED SPECIFICATION

**SURFACE MOUNT NPN
SILICON DARLINGTON TRANSISTOR**

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

MARKING CODE: C1NE

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)