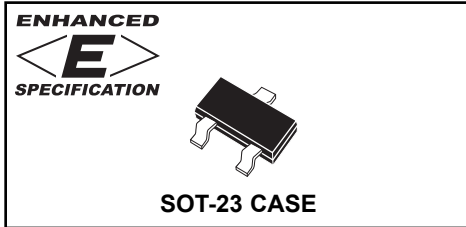


CMPT2222AE
ENHANCED SPECIFICATION
SURFACE MOUNT
NPN SILICON TRANSISTOR



CentralTM

Semiconductor Corp.

DESCRIPTION:

The Central Semiconductor CMPT2222AE is an Enhanced version of the CMPT2222A NPN Switching transistor in a SOT-23 surface mount package, designed for switching applications, interface circuit and driver circuit applications.

MARKING CODE: C1PE

FEATURED ENHANCED SPECIFICATIONS:

- ◆ V_{CBO} from 75V min to 100V min. (145V TYP)
- ◆ V_{CE} from 1.0V max to 0.5V max. (0.12V TYP)
- ◆ h_{FE} from 40 to 60 min. (130 TYP)

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	MIN	TYP	MAX	UNITS
V_{CBO}	100			V
V_{CEO}	45			V
V_{EBO}	6.0			V
I_C	600			mA
P_D	350			mW
T_J, T_{stg}	-65	+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}	$V_{CB}=60\text{V}$			10	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$			10	μA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$			10	nA
I_{EBO}	$V_{EB}=3.0\text{V}$			10	nA
◆ BV_{CBO}	$I_C=10\mu\text{A}$	100	145		V
◆ BV_{CEO}	$I_C=10\text{mA}$	45	53		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0			V
◆ $V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.92	0.15	V
◆ $V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.12	0.50	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6		1.2	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$			2.0	V
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	100	210		
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	100	205		
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	100	205		
◆ h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	75	150		
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100		300	
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	60	130		
f_T	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	300			MHz

- ◆ Enhanced specification.

R1 (20-February 2003)

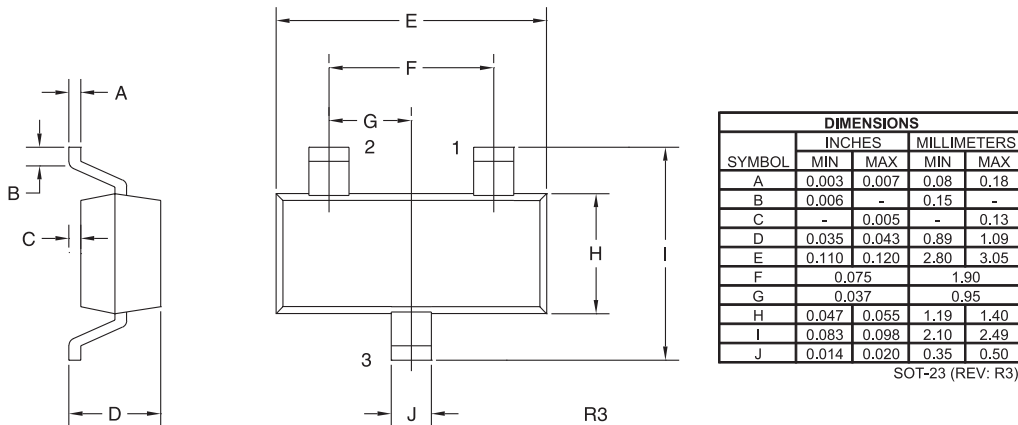
ENHANCED SPECIFICATION

**SURFACE MOUNT
NPN SILICON TRANSISTOR**

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$			8.0	pF
C_{ib}	$V_{BE}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$			25	pF
h_{ie}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	2.0		8.0	$\text{k}\Omega$
h_{ie}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	0.25		1.25	$\text{k}\Omega$
h_{re}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$			8.0	$\times 10^{-4}$
h_{re}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$			4.0	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	50		300	
h_{fe}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	75		375	
h_{oe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	5.0		35	μhos
h_{oe}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	25		200	μhos
$rb'C_C$	$V_{CB}=10\text{V}$, $I_E=20\text{mA}$, $f=31.8\text{MHz}$			150	ps
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_S=1.0\text{k}\Omega$, $f=1.0\text{kHz}$			4.0	dB
t_d	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$			10	ns
t_r	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$			25	ns
t_s	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$			225	ns
t_f	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$			60	ns

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING CODE: C1PE

R1 (20-February 2003)