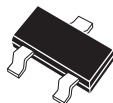


CMPT3904E NPN
CMPT3906E PNP

**ENHANCED SPECIFICATION
SURFACE MOUNT COMPLEMENTARY
SILICON TRANSISTORS**

**ENHANCED
E
SPECIFICATION**



SOT-23 CASE

**MARKING CODES: CMPT3904E: C1AE
CMPT3906E: C2AE**

Central™

Semiconductor Corp.

DESCRIPTION:

The Central Semiconductor CMPT3904E , CMPT3906E are Enhanced versions of the CMPT3904, CMPT3906 complementary switching transistors in a SOT-23 surface mount package, designed for small signal switching applications, interface circuit & driver circuit applications.

ENHANCED SPECIFICATIONS:

- ◆ BV_{CBO} from 40V min to 60V min. (CMPT3906E)
- ◆ BV_{EBO} from 5.0V min to 6.0V min. (CMPT3906E)
- ◆ $V_{CE(SAT)}$ from 0.3V max to 0.2V max. (CMPT3904E)
from 0.4V max to 0.2V max. (CMPT3906E)
- ◆ h_{FE} from 60 min to 70 min. (CMPT3904E) (CMPT3906E)

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

	SYMBOL		UNITS
◆ Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	40	V
◆ Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	200	mA
Power Dissipation	P_D	350	mW
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	θ_{JA}	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	CMPT3904E		CMPT3906E		UNITS
		MIN	TYP	TYP	MAX	
I_{CEV}	$V_{CE}=30\text{V}, V_{EB}=3.0\text{V}$	-	-	-	50	nA
◆ BV_{CBO}	$I_C=10\mu\text{A}$	60	115	90	-	V
BV_{CEO}	$I_C=1.0\text{mA}$	40	60	55	-	V
◆ BV_{EBO}	$I_E=10\mu\text{A}$	6.0	7.5	7.9	-	V
◆ $V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.057	0.050	0.100	V
◆ $V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.100	0.100	0.200	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	0.65	0.75	0.75	0.85	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.85	0.85	0.95	V
◆ h_{FE}	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	90	240	130		
◆ h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	100	235	150		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100	215	150	300	
◆ h_{FE}	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$	70	110	120		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$	30	50	55		

- ◆ Enhanced specification.

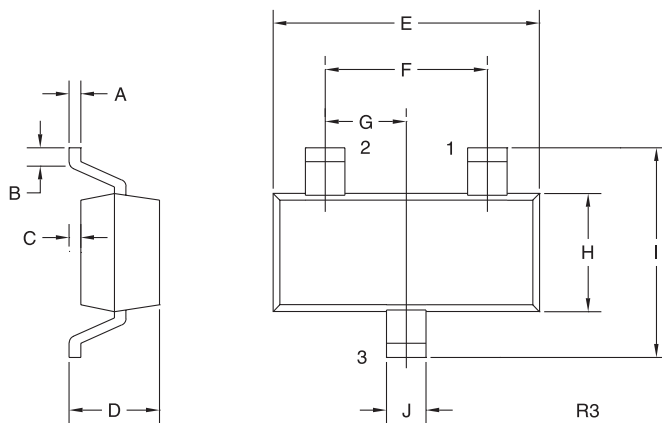
R2 (13-November 2002)

**ENHANCED SPECIFICATION
SURFACE MOUNT
COMPLEMENTARY
SILICON TRANSISTORS**

SYMBOL TEST CONDITIONS

		MIN	MAX	UNITS
f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300		MHz
C_{ob}	$V_{CB}=5.0V, I_E=0, f=1.0MHz$		4.0	pF
C_{ib}	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		8.0	pF
h_{ie}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	1.0	12	$k\Omega$
h_{re}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	0.1	10	$\times 10^{-4}$
h_{fe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	100	400	
h_{oe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	1.0	60	$\mu mhos$
NF	$V_{CE}=5.0V, I_C=100\mu A, R_S=1.0K\Omega, f=10Hz$ to 15.7kHz		4.0	dB
t_d	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		35	ns
t_r	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		35	ns
t_s	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		200	ns
t_f	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		50	ns

SOT-23 CASE - MECHANICAL OUTLINE



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)

LEAD CODE:

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

MARKING CODES:

- | | |
|-----------|------|
| CMPT3904E | C1AE |
| CMPT3906E | C2AE |



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