

CMPT3904 CMPT3904G\* NPN  
 CMPT3906 CMPT3906G\* PNP

**SURFACE MOUNT SILICON  
 COMPLEMENTARY TRANSISTORS**



**SOT-23 CASE**

\* Device is *Halogen Free* by design



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

These CENTRAL SEMICONDUCTOR devices are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose amplifier and switching applications.

**MARKING CODES: CMPT3904: C1A**  
**CMPT3906: C2A**  
**CMPT3904G\*: CG1**  
**CMPT3906G\*: CG2**

**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	CMPT3904	CMPT3906	UNITS
	CMPT3904G*	CMPT3906G*	
$V_{CBO}$	60	40	V
$V_{CEO}$	40	40	V
$V_{EBO}$	6.0	5.0	V
$I_C$		200	mA
$P_D$		350	mW
$T_J, T_{stg}$	-65 to +150		$^\circ\text{C}$
$\theta_{JA}$	357		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS
$I_{CEV}$	$V_{CE}=30\text{V}, V_{EB}=3.0\text{V}$
$I_{BL}$	$V_{CE}=30\text{V}, V_{EB}=3.0\text{V}$
$BV_{CBO}$	$I_C=10\mu\text{A}$
$BV_{CEO}$	$I_C=1.0\text{mA}$
$BV_{EBO}$	$I_E=10\mu\text{A}$
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=100\text{mA}$

SYMBOL	CMPT3904 CMPT3904G*		CMPT3906 CMPT3906G*		UNITS
	MIN	MAX	MIN	MAX	
$I_{CEV}$	-	50	-	50	nA
$I_{BL}$	-	50	-	50	nA
$BV_{CBO}$	60	-	40	-	V
$BV_{CEO}$	40	-	40	-	V
$BV_{EBO}$	6.0	-	5.0	-	V
$V_{CE(SAT)}$	-	0.20	-	0.25	V
$V_{CE(SAT)}$	-	0.30	-	0.40	V
$V_{BE(SAT)}$	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	-	0.95	-	0.95	V
$h_{FE}$	40	-	60	-	
$h_{FE}$	70	-	80	-	
$h_{FE}$	100	300	100	300	
$h_{FE}$	60	-	60	-	
$h_{FE}$	30	-	30	-	

CMPT3904 CMPT3904G\* NPN  
 CMPT3906 CMPT3906G\* PNP

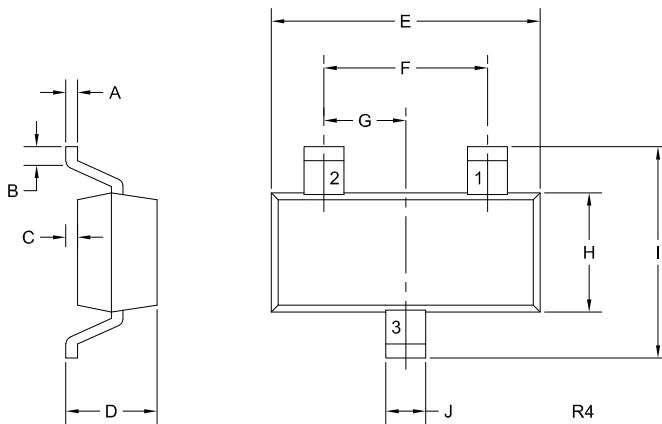
**SURFACE MOUNT SILICON  
 COMPLEMENTARY TRANSISTORS**



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$ )

SYMBOL	TEST CONDITIONS	CMPT3904 CMPT3904G*		CMPT3906 CMPT3906G*		UNITS
		MIN	MAX	MIN	MAX	
$f_T$	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	300	-	250	-	MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$	-	4.0	-	4.5	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$	-	12	-	12	pF
$t_d$	$V_{CC}=3.0\text{V}, V_{BE}=0.5, I_C=10\text{mA}, I_{B1}=1.0\text{mA}$	-	35	-	35	ns
$t_r$	$V_{CC}=3.0\text{V}, V_{BE}=0.5, I_C=10\text{mA}, I_{B1}=1.0\text{mA}$	-	35	-	35	ns
$t_s$	$V_{CC}=3.0\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1.0\text{mA}$	-	200	-	225	ns
$t_f$	$V_{CC}=3.0\text{V}, I_C=10\text{mA}, I_{B1}=I_{B2}=1.0\text{mA}$	-	50	-	75	ns

**SOT-23 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	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	0.044	0.89	1.12
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	0.104	2.10	2.64
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R4)

**LEAD CODE:**

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

**MARKING CODES:**

**CMPT3904: C1A**  
**CMPT3906: C2A**  
**CMPT3904G\*: CG1**  
**CMPT3906G\*: CG2**

\* Device is *Halogen Free* by design

R10 (25-March 2020)

## 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 quick 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

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)