

CMPT3904 CMPT3904G* NPN
CMPT3906 CMPT3906G* PNP

SURFACE MOUNT SILICON COMPLEMENTARY TRANSISTORS



SOT-23 CASE

* Device is **Halogen Free** by design



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°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		°C
Θ _{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C)

SYMBOL	TEST CONDITIONS	CMPT3904 CMPT3904G*		CMPT3906 CMPT3906G*		UNITS
		MIN	MAX	MIN	MAX	
I _{CEV}	V _{CE} =30V, V _{EB} =3.0V	-	50	-	50	nA
I _{BL}	V _{CE} =30V, V _{EB} =3.0V	-	50	-	50	nA
BV _{CBO}	I _C =10μA	60	-	40	-	V
BV _{CEO}	I _C =1.0mA	40	-	40	-	V
BV _{EBO}	I _E =10μA	6.0	-	5.0	-	V
V _{CE} (SAT)	I _C =10mA, I _B =1.0mA	-	0.20	-	0.25	V
V _{CE} (SAT)	I _C =50mA, I _B =5.0mA	-	0.30	-	0.40	V
V _{BE} (SAT)	I _C =10mA, I _B =1.0mA	0.65	0.85	0.65	0.85	V
V _{BE} (SAT)	I _C =50mA, I _B =5.0mA	-	0.95	-	0.95	V
h _{FE}	V _{CE} =1.0V, I _C =0.1mA	40	-	60	-	
h _{FE}	V _{CE} =1.0V, I _C =1.0mA	70	-	80	-	
h _{FE}	V _{CE} =1.0V, I _C =10mA	100	350	100	300	
h _{FE}	V _{CE} =1.0V, I _C =50mA	60	-	60	-	
h _{FE}	V _{CE} =1.0V, I _C =100mA	30	-	30	-	

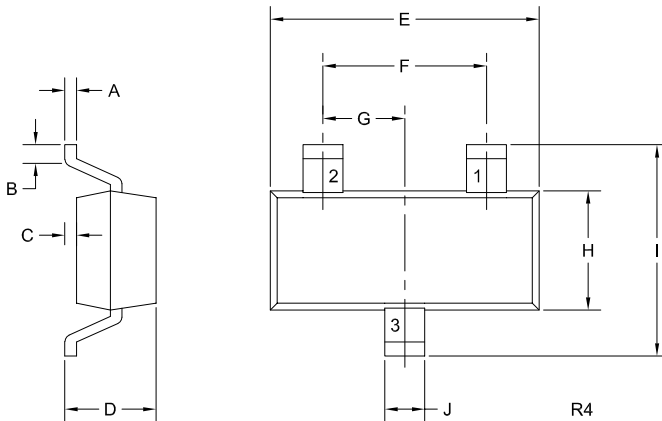
CMPT3904 CMPT3904G* NPN
CMPT3906 CMPT3906G* PNP

**SURFACE MOUNT SILICON
COMPLEMENTARY TRANSISTORS**



ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$)		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	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$	-	170	-	170	ns
t_f	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$	-	80	-	80	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	0.044	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

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 (2nd 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

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
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