

CMPT3904 CMPT3904G* NPN
 CMPT3906 CMPT3906G* PNP

**SURFACE MOUNT
 COMPLEMENTARY
 SILICON TRANSISTORS**



SOT-23 CASE

* Device is **Halogen Free** by design



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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
I _{CEV}	V _{CE} =30V, V _{EB} =3.0V
I _{BL}	V _{CE} =30V, V _{EB} =3.0V
BV _{CBO}	I _C =10μA
BV _{CEO}	I _C =1.0mA
BV _{EBO}	I _E =10μA
V _{CE(SAT)}	I _C =10mA, I _B =1.0mA
V _{CE(SAT)}	I _C =50mA, I _B =5.0mA
V _{BE(SAT)}	I _C =10mA, I _B =1.0mA
V _{BE(SAT)}	I _C =50mA, I _B =5.0mA
h _{FE}	V _{CE} =1.0V, I _C =0.1mA
h _{FE}	V _{CE} =1.0V, I _C =1.0mA
h _{FE}	V _{CE} =1.0V, I _C =10mA
h _{FE}	V _{CE} =1.0V, I _C =50mA
h _{FE}	V _{CE} =1.0V, I _C =100mA

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	-	

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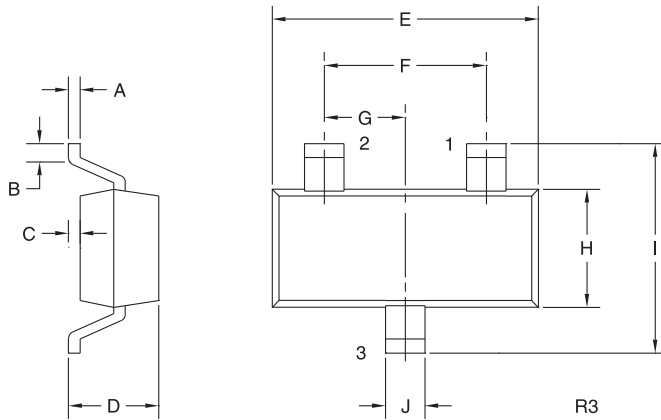


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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$)

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}	$V_{BE}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$	-	8.0	-	10	pF
h_{ie}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	1.0	10	2.0	12	$k\Omega$
h_{re}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	0.5	8.0	0.1	10	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	100	400	100	400	
h_{oe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	1.0	40	3.0	60	μS
NF	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$, $R_S=1.0k\Omega$, $f=10\text{Hz}$ to 15.7kHz	-	5.0	-	4.0	dB
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	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:

CMPT3904: C1A
 CMPT3906: C2A
 CMPT3904G*: CG1
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* Device is **Halogen Free** by design

R7 (1-February 2010)

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