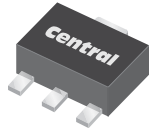


CXT3904 NPN  
CXT3906 PNP

**SURFACE MOUNT  
COMPLEMENTARY  
SILICON TRANSISTORS**



**SOT-89 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CXT3904, CXT3906 types are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage	$V_{CBO}$	60	40	V
Collector-Emitter Voltage	$V_{CEO}$	40	40	V
Emitter-Base Voltage	$V_{EBO}$	6.0	5.0	V
Continuous Collector Current	$I_C$		200	mA
Power Dissipation	$P_D$		1.2	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150	$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		104	$^\circ\text{C/W}$

	<b>SYMBOL</b>	<b>CXT3904</b>	<b>CXT3906</b>	<b>UNITS</b>
Collector-Base Voltage	$V_{CBO}$	60	40	V
Collector-Emitter Voltage	$V_{CEO}$	40	40	V
Emitter-Base Voltage	$V_{EBO}$	6.0	5.0	V
Continuous Collector Current	$I_C$		200	mA
Power Dissipation	$P_D$		1.2	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150	$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		104	$^\circ\text{C/W}$

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

<b>SYMBOL</b>	<b>TEST CONDITIONS</b>	<b>CXT3904</b>		<b>CXT3906</b>		<b>UNITS</b>
		<b>MIN</b>	<b>MAX</b>	<b>MIN</b>	<b>MAX</b>	
$I_{CEV}$	$V_{CE}=30V, V_{EB}=3.0V$	-	50	-	50	nA
$I_{BL}$	$V_{CE}=30V, V_{EB}=3.0V$	-	50	-	50	nA
$BV_{CBO}$	$I_C=10\mu A$	60	-	40	-	V
$BV_{CEO}$	$I_C=1.0mA$	40	-	40	-	V
$BV_{EBO}$	$I_E=10\mu A$	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	300	100	300	
$h_{FE}$	$V_{CE}=1.0V, I_C=50mA$	60	-	60	-	
$h_{FE}$	$V_{CE}=1.0V, I_C=100mA$	30	-	30	-	

**CXT3904 NPN  
CXT3906 PNP**

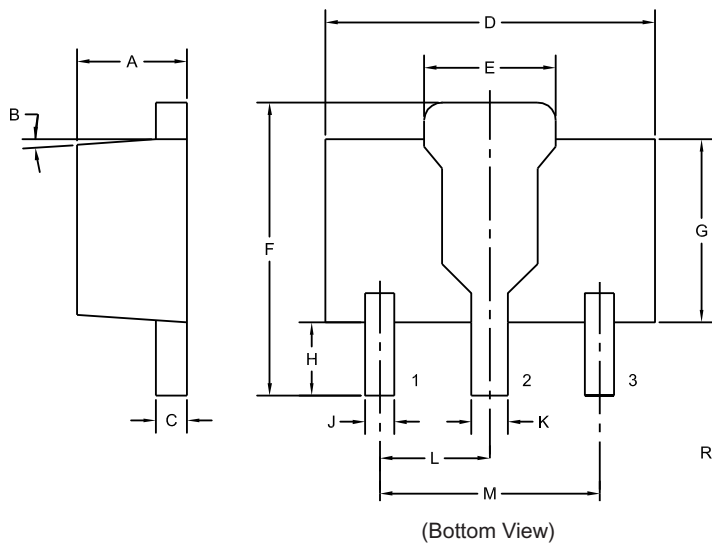
**SURFACE MOUNT  
COMPLEMENTARY  
SILICON TRANSISTORS**



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

SYMBOL	TEST CONDITIONS	CXT3904		CXT3906		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	$\text{k}\Omega$
$h_{re}$	$V_{CE}=10\text{V}$ , $I_C=1.0\text{mA}$ , $f=1.0\text{kHz}$	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	mS
NF	$V_{CE}=5.0\text{V}$ , $I_C=100\mu\text{A}$ , $R_S=1.0\text{k}\Omega$ , $f=10\text{Hz}$ to $15.7\text{kHz}$	-	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-89 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.067	1.40	1.70
B	4°		4°	
C	0.014	0.018	0.35	0.46
D	0.173	0.185	4.40	4.70
E	0.064	0.074	1.62	1.87
F	0.146	0.177	3.70	4.50
G	0.090	0.106	2.29	2.70
H	0.028	0.051	0.70	1.30
J	0.014	0.019	0.36	0.48
K	0.017	0.023	0.44	0.58
L	0.059		1.50	
M	0.118		3.00	

SOT-89 (REV: R4)

**LEAD CODE:**

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

**MARKING:**

**FULL PART NUMBER**

R7 (23-February 2010)