

CMXT3904

**SURFACE MOUNT
DUAL NPN
SILICON TRANSISTORS**



www.centrasemi.com

SUPERmini™



SOT-26 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMXT3904 type is a dual NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a SUPERmini™ surface mount package, and designed for small signal general purpose amplifier and switching applications.

MARKING CODE: X1A

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

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEV}	$V_{CE}=30V, V_{EB}=3.0V$		50	nA
BV_{CBO}	$I_C=10\mu A$	60		V
BV_{CEO}	$I_C=1.0mA$	40		V
BV_{EBO}	$I_E=10\mu A$	6.0		V
$V_{CE(SAT)}$	$I_C=10mA, I_B=1.0mA$		0.20	V
$V_{CE(SAT)}$	$I_C=50mA, I_B=5.0mA$		0.30	V
$V_{BE(SAT)}$	$I_C=10mA, I_B=1.0mA$	0.65	0.85	V
$V_{BE(SAT)}$	$I_C=50mA, I_B=5.0mA$		0.95	V
h_{FE}	$V_{CE}=1.0V, I_C=0.1mA$	40		
h_{FE}	$V_{CE}=1.0V, I_C=1.0mA$	70		
h_{FE}	$V_{CE}=1.0V, I_C=10mA$	100	300	
h_{FE}	$V_{CE}=1.0V, I_C=50mA$	60		
h_{FE}	$V_{CE}=1.0V, I_C=100mA$	30		
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	10	k Ω

R3 (12-February 2010)

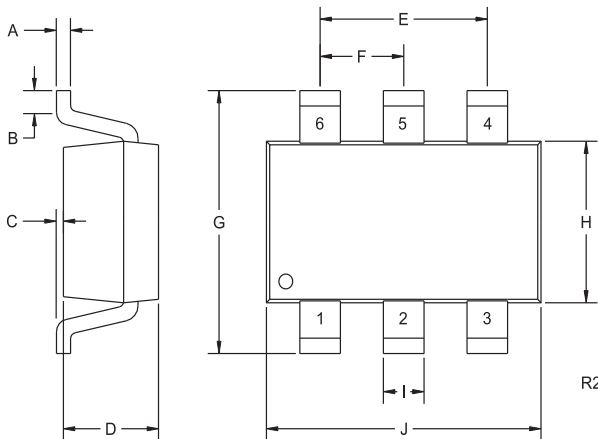
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ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{re}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	0.5	8.0	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	100	400	
h_{oe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	1.0	40	μS
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 15.7kHz		5.0	dB
t_d	$V_{CC}=3.0\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1.0\text{mA}$		35	ns
t_r	$V_{CC}=3.0\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=10\text{mA}$, $I_{B1}=1.0\text{mA}$		35	ns
t_s	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		200	ns
t_f	$V_{CC}=3.0\text{V}$, $I_C=10\text{mA}$, $I_{B1}=I_{B2}=1.0\text{mA}$		50	ns

SOT-26 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.11	0.19
B	0.016	-	0.40	-
C	-	0.004	-	0.10
D	0.039	0.047	1.00	1.20
E	0.074	0.075	1.88	1.92
F	0.037	0.038	0.93	0.97
G	0.102	0.118	2.60	3.00
H	0.059	0.067	1.50	1.70
I	0.016		0.41	
J	0.110	0.118	2.80	3.00

SOT-26 (REV: R2)

LEAD CODE:

- 1) Emitter Q1
- 2) Base Q1
- 3) Collector Q2
- 4) Emitter Q2
- 5) Base Q2
- 6) Collector Q1

MARKING CODE: X1A

R3 (12-February 2010)

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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
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- 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.

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- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
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- Application notes
- Application and design sample kits
- Custom product and package development

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