

CMPT4401 NPN  
CMPT4403 PNP

**SURFACE MOUNT  
COMPLEMENTARY  
SILICON TRANSISTORS**



**SOT-23 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT4401 and CMPT4403 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: CMPT4401: C2X  
CMPT4403: C2T**

**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	CMPT4401	CMPT4403	UNITS
$V_{CB0}$	60	40	V
$V_{CE0}$	40	40	V
$V_{EBO}$	6.0	5.0	V
$I_C$		600	mA
$P_D$		350	mW
$T_J, T_{stg}$		-65 to +150	$^\circ\text{C}$
$\theta_{JA}$		357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	CMPT4401		CMPT4403		UNITS
		MIN	MAX	MIN	MAX	
$I_{CEV}$	$V_{CE}=35\text{V}, V_{EB}=0.4\text{V}$	-	0.1	-	0.1	$\mu\text{A}$
$I_{BEV}$	$V_{CE}=35\text{V}, V_{EB}=0.4\text{V}$	-	0.1	-	0.1	$\mu\text{A}$
$BV_{CB0}$	$I_C=100\mu\text{A}$	60	-	40	-	V
$BV_{CE0}$	$I_C=1.0\text{mA}$	40	-	40	-	V
$BV_{EBO}$	$I_E=100\mu\text{A}$	6.0	-	5.0	-	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	-	0.40	-	0.40	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	0.75	-	0.75	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.75	0.95	0.75	0.95	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$	-	1.2	-	1.3	V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=0.1\text{mA}$	20	-	30	-	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=1.0\text{mA}$	40	-	60	-	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	80	-	100	-	

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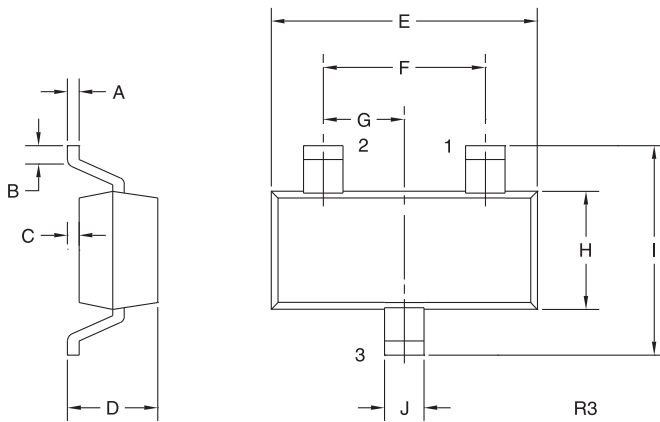
SURFACE MOUNT  
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	CMPT4401		CMPT4403		UNITS
		MIN	MAX	MIN	MAX	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	100	300	-	-	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=150\text{mA}$	-	-	100	300	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	40	-	20	-	
$f_T$	$V_{CE}=10\text{V}, I_C=20\text{mA}, f=100\text{MHz}$	250	-	200	-	MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$	-	6.5	-	8.5	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$	-	30	-	30	pF
$h_{ie}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	1.0	15	1.5	15	$k\Omega$
$h_{re}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	0.1	8.0	0.1	8.0	$\times 10^{-4}$
$h_{fe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	40	500	60	500	
$h_{oe}$	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	1.0	30	1.0	100	$\mu\text{S}$
$t_d$	$V_{CC}=30\text{V}, V_{BE}=2.0, I_C=150\text{mA}, I_{B1}=15\text{mA}$	-	15	-	15	ns
$t_r$	$V_{CC}=30\text{V}, V_{BE}=2.0, I_C=150\text{mA}, I_{B1}=15\text{mA}$	-	20	-	20	ns
$t_s$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$	-	225	-	225	ns
$t_f$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$	-	30	-	30	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	0.043	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:**

CMPT4401: C2X  
 CMPT4403: C2T

R5 (1-February 2010)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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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
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### 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

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### 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).

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### CONTACT US

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