

CMPT4401 NPN
CMPT4403 PNP

COMPLEMENTARY
SILICON TRANSISTORS



CentralTM

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT4401, CMPT4403 types 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°C)

	SYMBOL	CMPT4401	CMPT4403	UNITS
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	600		mA
Power Dissipation	P _D	350		mW
Operating and Storage Junction Temperature	T _J , T _{stg}	-65 to +150		°C
Thermal Resistance	θ _{JA}	357		°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	CMPT4401		CMPT4403		UNITS
		MIN	MAX	MIN	MAX	
I _{CEV}	V _{CE} =35V, V _{EB} =0.4V		0.1	0.1		μA
I _{BEV}	V _{CE} =35V, V _{EB} =0.4V		0.1	0.1		μA
BV _{CBO}	I _C =100μA	60		40		V
BV _{CEO}	I _C =1.0mA	40		40		V
BV _{EBO}	I _E =100μA	6.0		5.0		V
V _{CE(SAT)}	I _C =150mA, I _B =15mA		0.40		0.40	V
V _{CE(SAT)}	I _C =500mA, I _B =50mA		0.75		0.75	V
V _{BE(SAT)}	I _C =150mA, I _B =15mA	0.75	0.95	0.75	0.95	V
V _{BE(SAT)}	I _C =500mA, I _B =50mA		1.2		1.3	V
h _{FE}	V _{CE} =1.0V, I _C =0.1mA	20		30		
h _{FE}	V _{CE} =1.0V, I _C =1.0mA	40		60		
h _{FE}	V _{CE} =1.0V, I _C =10mA	80		100		

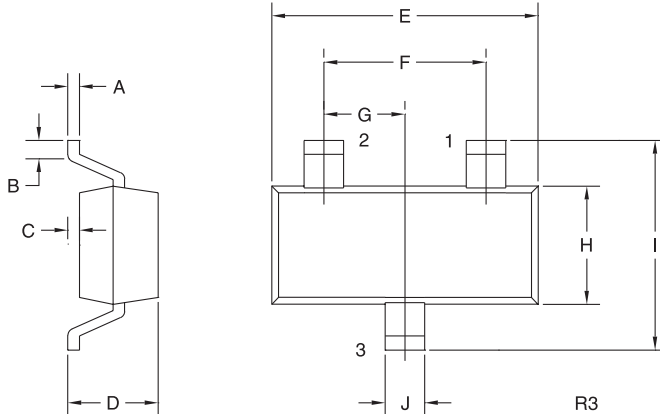
R4 (26-September 2002)

COMPLEMENTARY SILICON TRANSISTORS

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ 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	μmhos
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	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