

CMPT5401E

**ENHANCED SPECIFICATION
SURFACE MOUNT
PNP SILICON TRANSISTOR**



www.centrasemi.com



SOT-23 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5401E is an PNP Silicon Transistor, packaged in an SOT-23 case, designed for general purpose amplifier applications requiring high breakdown voltage and small space saving packaging.

MARKING CODE: C540

FEATURES:

- High Collector Breakdown Voltage 250V
- Low Leakage Current 50nA Max
- Low Saturation Voltage 150mV Max @ 50mA
- Complementary Device CMPT5551E
- SOT-23 Surface Mount Package

APPLICATIONS:

- General purpose switching and amplification
- Telephone applications

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}	250	V
V_{CEO}	220	V
V_{EBO}	7.0	V
I_C	600	mA
P_D	350	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=120\text{V}$		50	nA
I_{CBO}	$V_{CB}=120\text{V}, T_A=100^\circ\text{C}$		50	μA
I_{EBO}	$V_{EB}=3.0\text{V}$		50	nA
◆ BV_{CBO}	$I_C=100\mu\text{A}$	250		V
◆ BV_{CEO}	$I_C=1.0\text{mA}$	220		V
◆ BV_{EBO}	$I_E=10\mu\text{A}$	7.0		V
◆ $V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		100	mV
◆ $V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		150	mV
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		1.00	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		1.00	V
◆ h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	100		
◆ h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	100	300	
◆ h_{FE}	$V_{CE}=5.0\text{V}, I_C=50\text{mA}$	75		
◆ h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	25		

◆ Enhanced specification

R1 (1-February 2010)

CMPT5401E

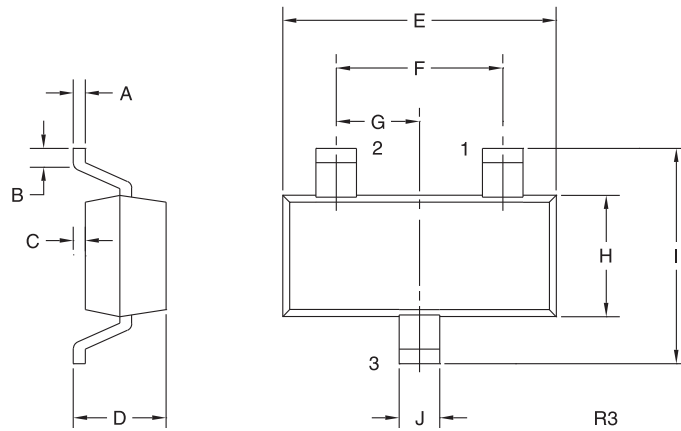
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=100\text{MHz}$	100	300	MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		6.0	pF
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	40	200	
NF	$V_{CE}=5.0\text{V}$, $I_C=200\mu\text{A}$, $R_S=10\Omega$, $f=10\text{Hz}$ to 15.7kHz		8.0	dB

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

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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)

R1 (1-February 2010)