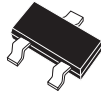


CMPT5088  
CMPT5089

**SURFACE MOUNT  
NPN SILICON TRANSISTORS**



**SOT-23 CASE**

**Central**<sup>TM</sup>  
**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT5088, CMPT5089 types are NPN 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 Codes are C1Q, C1R respectively.

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

	<u>SYMBOL</u>	<u>CMPT5088</u>	<u>CMPT5089</u>	<u>UNITS</u>
Collector-Base Voltage	$V_{CB0}$	35	30	V
Collector-Emitter Voltage	$V_{CEO}$	30	25	V
Emitter-Base Voltage	$V_{EBO}$	4.5		V
Collector Current	$I_C$	50		mA
Power Dissipation	$P_D$	350		mW
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$	357		$^\circ\text{C/W}$

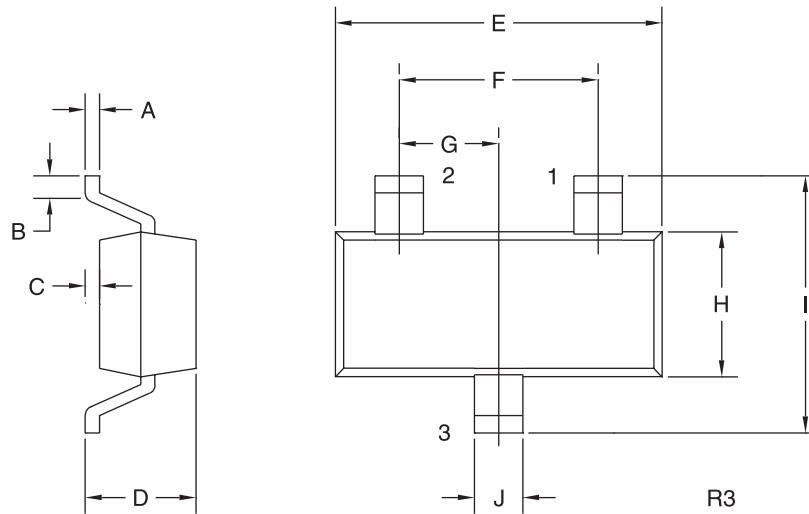
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>CMPT5088</u>		<u>CMPT5089</u>		<u>UNITS</u>
		<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	
$I_{CBO}$	$V_{CB}=20\text{V}$		50			nA
$I_{CBO}$	$V_{CB}=15\text{V}$			50		nA
$I_{EBO}$	$V_{EB}=3.0\text{V}$		50			nA
$I_{EBO}$	$V_{EB}=4.5\text{V}$			100		nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	35		30		V
$BV_{CEO}$	$I_C=1.0\text{mA}$	30		25		V
$BV_{EBO}$	$I_E=100\mu\text{A}$	4.5		4.5		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.5		0.5	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.8		0.8	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	300	900	400	1200	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	350		450		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	300		400		
$f_T$	$V_{CE}=5.0\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$	50		50		MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$		4.0		4.0	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		15		15	pF
$h_{fe}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	350	1400	450	1800	
NF	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, R_S=10\text{k}\Omega$ $f=10\text{Hz}$ to $15.7\text{kHz}$		3.0		2.0	dB

R4 ( 2 -October 2001)

**SURFACE MOUNT  
NPN SILICON TRANSISTORS**

**SOT-23 CASE - MECHANICAL OUTLINE**



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

**MARKING CODE:**  
CMPT5088 - C1Q  
CMPT5089 - C1R

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)