

CMPT5088  
CMPT5089

**SURFACE MOUNT  
NPN SILICON TRANSISTOR**



**SOT-23 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT5088 and CMPT5089 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: CMPT5088: C1Q  
CMPT5089: C1R**

**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	CMPT5088	CMPT5089	UNITS
$V_{CBO}$	35	30	V
$V_{CEO}$	30	25	V
$V_{EBO}$		4.5	V
$I_C$		50	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	CMPT5088		CMPT5089		UNITS
		MIN	MAX	MIN	MAX	
$I_{CBO}$	$V_{CB}=20\text{V}$	-	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

R7 (9-September 2010)

CMPT5088  
 CMPT5089  
 SURFACE MOUNT  
 NPN SILICON TRANSISTOR



SOT-23 CASE - MECHANICAL OUTLINE



**LEAD CODE:**

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

**MARKING CODES:**

CMPT5088: C1Q  
 CMPT5089: C1R

DIMENSIONS				
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)

R7 (9-September 2010)