

CMPT3090L

**SURFACE MOUNT  
LOW  $V_{CE(SAT)}$  NPN  
SILICON POWER TRANSISTOR**

**POWER  
23**



**SOT-23 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT3090L is a Low  $V_{CE(SAT)}$  NPN Silicon Transistor in a space saving Power SOT-23 surface mount package, designed for DC-DC converters for mobile systems and LAN cards, motor control, power management and strobe flash units.

**MARKING CODE: 309L**

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

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Peak Collector Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL		UNITS
$V_{CBO}$	45	V
$V_{CEO}$	15	V
$V_{EBO}$	6.0	V
$I_C$	3.0	A
$I_{CM}$	6.0	A
$P_D$	350	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	357	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CBO}$	$V_{CB}=20\text{V}$			100	nA
$I_{EBO}$	$V_{EB}=5.0\text{V}$			100	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	45			V
$BV_{CEO}$	$I_C=10\text{mA}$	15			V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0			V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=1.0\text{mA}$		30	50	mV
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=20\text{mA}$		60	150	mV
$V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$		85	200	mV
$V_{CE(SAT)}$	$I_C=3.0\text{A}, I_B=60\text{mA}$		145	300	mV
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	200			
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	200			
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=3.0\text{A}$	175			
$C_{ob}$	$V_{CB}=10\text{V}, f=1.0\text{MHz}$			100	pF
$f_T$	$V_{CE}=10\text{V}, I_C=500\text{mA}$	100			MHz

R2 (1-February 2010)

**CMPT3090L**  
**SURFACE MOUNT**  
**LOW V<sub>CE(SAT)</sub> NPN**  
**SILICON POWER TRANSISTOR**



**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODE: 309L**

<b>DIMENSIONS</b>				
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)

R2 (1-February 2010)