

CM4209

PNP SILICON TRANSISTOR



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CM4209 is a PNP Saturated Switching Silicon Transistor designed for high speed switching applications.

MARKING: FULL PART NUMBER



TO-18 CASE

MAXIMUM RATINGS: (T<sub>A</sub>=25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V <sub>CB0</sub>	15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	15	V
Emitter-Base Voltage	V <sub>EBO</sub>	4.5	V
Continuous Collector Current	I <sub>C</sub>	200	mA
Power Dissipation	P <sub>D</sub>	500	mW
Power Dissipation (T <sub>C</sub> =25°C)	P <sub>D</sub>	1.2	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200	°C
Thermal Resistance	θ <sub>JA</sub>	350	°C/W
Thermal Resistance	θ <sub>JC</sub>	146	°C/W

ELECTRICAL CHARACTERISTICS: (T<sub>A</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I <sub>CES</sub>	V <sub>CE</sub> =8.0V		10	nA
I <sub>CES</sub>	V <sub>CE</sub> =8.0V, T <sub>A</sub> =125°C		5.0	µA
BV <sub>CB0</sub>	I <sub>C</sub> =100µA	15		V
BV <sub>CES</sub>	I <sub>C</sub> =100µA	15		V
BV <sub>CEO</sub>	I <sub>C</sub> =3.0mA	15		V
BV <sub>EBO</sub>	I <sub>E</sub> =100µA	4.5		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =1.0mA, I <sub>B</sub> =100µA		0.15	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		0.18	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA		0.60	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =1.0mA, I <sub>B</sub> =100µA		0.80	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA	0.69	0.86	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA		1.5	V
h <sub>FE</sub>	V <sub>CE</sub> =0.5V, I <sub>C</sub> =1.0mA	35		
h <sub>FE</sub>	V <sub>CE</sub> =0.3V, I <sub>C</sub> =10mA	50	120	
h <sub>FE</sub>	V <sub>CE</sub> =0.3V, I <sub>C</sub> =10mA, T <sub>A</sub> =-55°C	20		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =50mA	40		

R0 (10-June 2011)

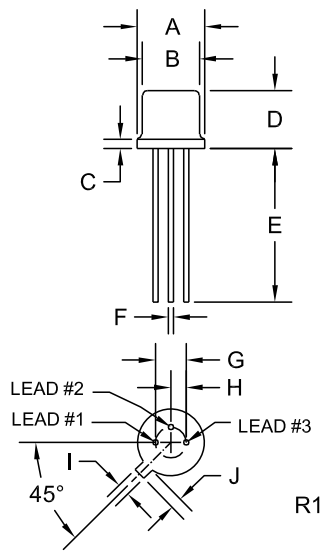
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$f_T$	$V_{CE}=10\text{V}$ , $I_C=10\text{mA}$ , $f=100\text{MHz}$	850		MHz
$C_{ob}$	$V_{CB}=5.0\text{V}$ , $I_E=0$		7.0	pF
$C_{ib}$	$V_{BE}=0.5\text{V}$ , $I_C=0$		7.0	pF
$t_{on}$	$V_{CC}=1.5\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=1.0\text{mA}$		20	ns
$t_{off}$	$V_{CC}=1.5\text{V}$ , $I_C=10\text{mA}$ , $I_{B1}=I_{B2}=1.0\text{mA}$		20	ns

**TO-18 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.209	0.230	5.31	5.84
B (DIA)	0.178	0.195	4.52	4.95
C	-	0.030	-	0.76
D	0.170	0.210	4.32	5.33
E	0.500	-	12.70	-
F (DIA)	0.016	0.019	0.41	0.48
G (DIA)	0.100		2.54	
H	0.050		1.27	
I	0.036	0.046	0.91	1.17
J	0.028	0.048	0.71	1.22

TO-18 (REV: R1)

**LEAD CODE:**

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

**MARKING: FULL PART NUMBER**

R0 (10-June 2011)