

CMST5088  
CMST5089

SURFACE MOUNT  
SUPERmini™  
NPN SILICON TRANSISTORS

SUPERmini™



SOT-323 CASE

**Central**™  
Semiconductor Corp.

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMST5088, CMST5089 types are NPN silicon transistors manufactured by the epitaxial planar process, epoxy molded in a SUPERmini™ surface mount package, designed for applications requiring high gain and low noise.

**MARKING CODES: CMST5088: 1QC  
CMST5089: 1RC**

**MAXIMUM RATINGS:** (T<sub>A</sub>=25°C)

	SYMBOL	CMST5088	CMST5089	UNITS
Collector-Base Voltage	V <sub>CBO</sub>	35	30	V
Collector-Emitter Voltage	V <sub>CEO</sub>	30	25	V
Emitter-Base Voltage	V <sub>EBO</sub>	4.5		V
Collector Current	I <sub>C</sub>	50		mA
Power Dissipation	P <sub>D</sub>	275		mW
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150		°C
Thermal Resistance	θ <sub>JA</sub>	455		°C/W

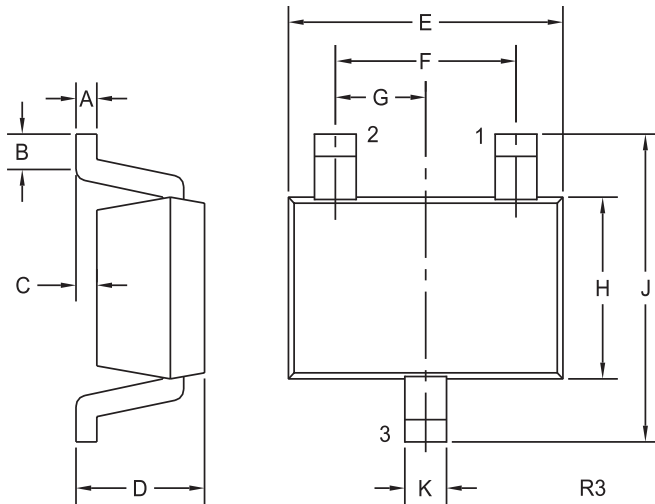
**ELECTRICAL CHARACTERISTICS:** (T<sub>A</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	CMST5088		CMST5089		UNITS
		MIN	MAX	MIN	MAX	
I <sub>CBO</sub>	V <sub>CB</sub> =20V		50			nA
I <sub>CBO</sub>	V <sub>CB</sub> =15V			50		nA
I <sub>EBO</sub>	V <sub>EB</sub> =3.0V		50			nA
I <sub>EBO</sub>	V <sub>EB</sub> =4.5V			100		nA
BV <sub>CBO</sub>	I <sub>C</sub> =100μA	35		30		V
BV <sub>CEO</sub>	I <sub>C</sub> =1.0mA	30		25		V
BV <sub>EBO</sub>	I <sub>E</sub> =100μA	4.5		4.5		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		0.5		0.5	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		0.8		0.8	V
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =0.1mA	300	900	400	1200	
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA	350		450		
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA	300		400		
f <sub>T</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =500μA, f=20MHz	50		50		MHz
C <sub>ob</sub>	V <sub>CB</sub> =5.0V, I <sub>E</sub> =0, f=1.0MHz		4.0		4.0	pF
C <sub>ib</sub>	V <sub>BE</sub> =0.5V, I <sub>C</sub> =0, f=1.0MHz		15		15	pF
h <sub>fe</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA, f=1.0kHz	350	1400	450	1800	
NF	V <sub>CE</sub> =5.0V, I <sub>C</sub> =100μA, R <sub>S</sub> =10kΩ f=10Hz to 15.7kHz		3.0		2.0	dB

R3 (4-January 2004)

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**SOT-323 CASE - MECHANICAL OUTLINE**



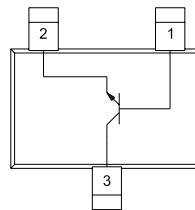
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.002	0.008	0.05	0.20
B	0.004	-	0.10	-
C	-	0.004	-	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.045	0.053	1.15	1.35
J	0.079	0.087	2.00	2.20
K	0.008	0.016	0.20	0.40

SOT-323 (REV: R3)

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**LEAD CODE:**

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



**MARKING CODE:**  
CMST5088 - 1QC  
CMST5089 - 1RC