

CMST5088
CMST5089

SUPERmini™
SURFACE MOUNT
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 are 1QC, 1RC respectively.

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

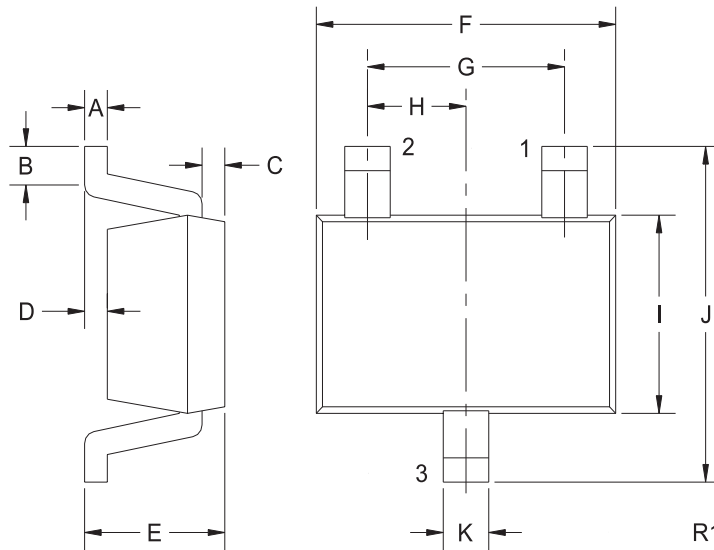
	<u>SYMBOL</u>	<u>CMST5088</u>	<u>CMST5089</u>	<u>UNITS</u>
Collector-Base Voltage	V_{CBO}	35	30	V
Collector-Emitter Voltage	V_{CEO}	30	25	V
Emitter-Base Voltage	V_{EBO}	4.5		V
Collector Current	I_C	50		mA
Power Dissipation	P_D	250		mW
Operating and Storage				
Junction Temperature	T_J, T_{stg}	-65 to +150		$^\circ\text{C}$
Thermal Resistance	θ_{JA}	500		$^\circ\text{C/W}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>CMST5088</u>		<u>CMST5089</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

R1 (19-September 2001)

SOT-323 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING CODE:
CMST5088 - 1QC
CMST5089 - 1RC

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.008	0.10	0.20
B	0.004	-	0.10	-
C	0.004	0.008	0.10	0.20
D	-	0.004	-	0.10
E	0.031	0.043	0.80	1.10
F	0.071	0.087	1.80	2.20
G	0.051		1.30	
H	0.026		0.65	
I	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: R1)

R1 (19-September 2001)