

CMST5088
CMST5089

SURFACE MOUNT
NPN SILICON TRANSISTOR

SUPERmini™



SOT-323 CASE



www.centrasemi.com

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

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

SYMBOL	CMST5088	CMST5089	UNITS
V_{CBO}	35	30	V
V_{CEO}	30	25	V
V_{EBO}		4.5	V
I_C		50	mA
P_D		275	mW
T_J, T_{stg}		-65 to +150	$^{\circ}\text{C}$
θ_{JA}		455	$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	CMST5088		CMST5089		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

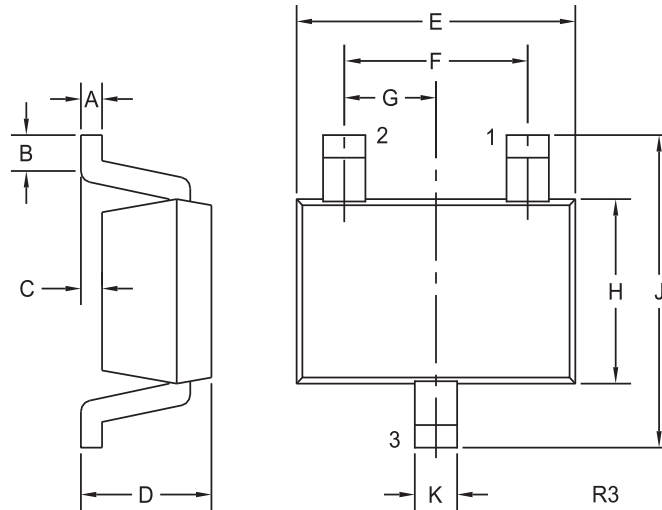
R4 (9-February 2010)

CMST5088
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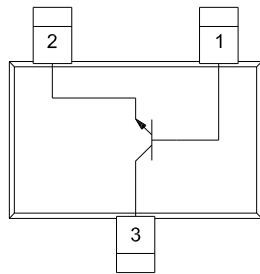
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SOT-323 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:

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

MARKING CODES:

CMST5088: 1QC
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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)

R4 (9-February 2010)