

CMLT5088EM

**SURFACE MOUNT  
DUAL, MATCHED  
NPN SILICON TRANSISTORS**

PICOmini™



**SOT-563 CASE**

• Device is **Halogen Free** by design

**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



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLT5088EM consists of two individual, isolated 5088E NPN silicon transistors with matched  $V_{BE(ON)}$  characteristics. This device is designed for applications requiring high gain and low noise.

**MARKING CODE: 88M**

**FEATURES:**

- Transistor pair matched for  $V_{BE(ON)}$

SYMBOL		UNITS
$V_{CBO}$	50	V
$V_{CEO}$	50	V
$V_{EBO}$	5.0	V
$I_C$	100	mA
$P_D$	350	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	357	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CBO}$	$V_{CB}=20\text{V}$			50	nA
$I_{EBO}$	$V_{EB}=3.0\text{V}$			50	nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	50	135		V
$BV_{CEO}$	$I_C=1.0\text{mA}$	50	65		V
$BV_{EBO}$	$I_E=100\mu\text{A}$	5.0	8.7		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		45	100	mV
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		110	400	mV
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		700	800	mV
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	300	430	900	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	300	435		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	300	430		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$	50	125		
$f_T$	$V_{CE}=5.0\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$	100			MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$			4.0	pF
$C_{ib}$	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$			15	pF
$h_{fe}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	350		1400	
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	dB

**MATCHING CHARACTERISTICS:**

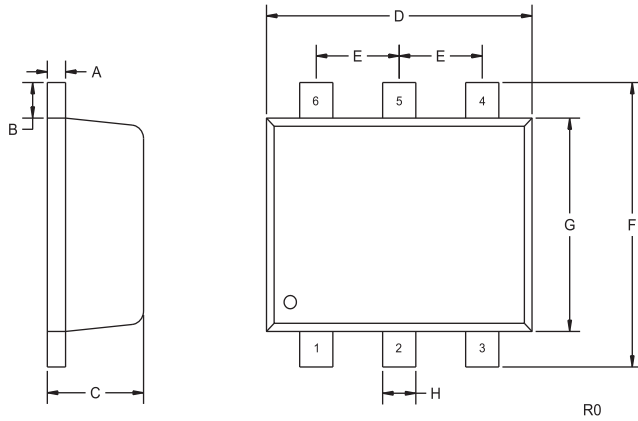
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=1.0\mu\text{A}$		10	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=5.0\mu\text{A}$		10	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$		10	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$		10	mV

R1 (20-January 2010)

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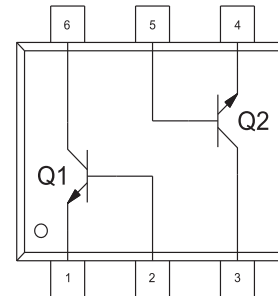
**SOT-563 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.047		1.20	
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R0)

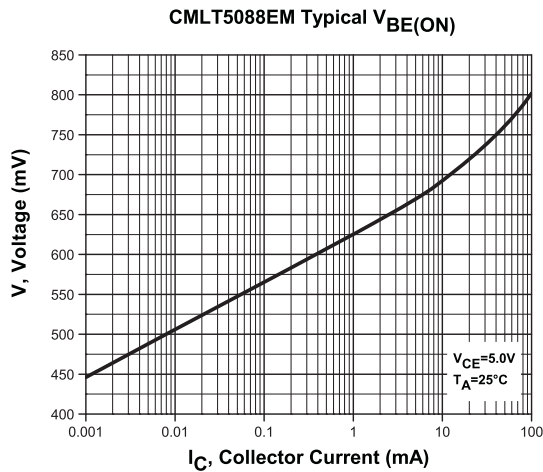
**PIN CONFIGURATION**



**LEAD CODE:**

- 1) Emitter Q1
- 2) Base Q1
- 3) Collector Q2
- 4) Emitter Q2
- 5) Base Q2
- 6) Collector Q1

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