

CMLT5088EM

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



**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	$^\circ\text{C/W}$

**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

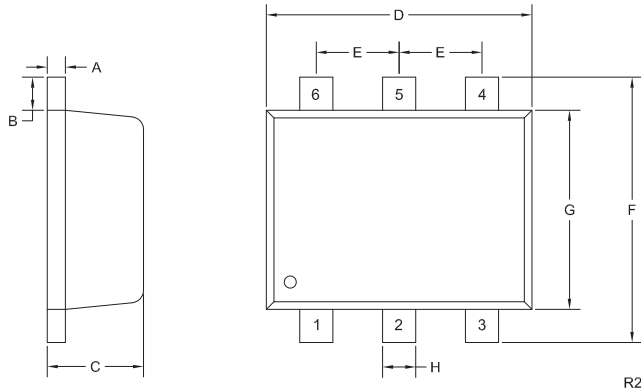
R3 (29-June 2015)

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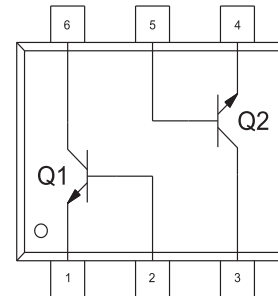
SOT-563 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

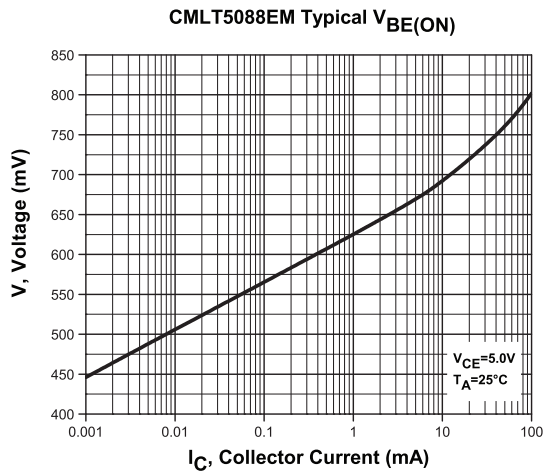
PIN CONFIGURATION



LEAD CODE:

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

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R3 (29-June 2015)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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