

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

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	$^{\circ}\text{C}$
Θ_{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 15.7kHz			3.0	dB

MATCHING CHARACTERISTICS:

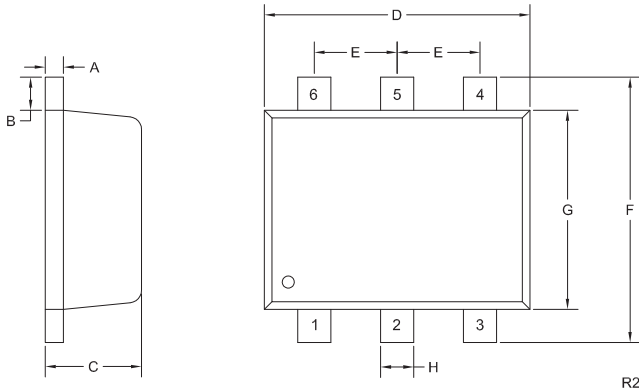
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=1.0\mu\text{A}$		10	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=5.0\mu\text{A}$		10	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$		10	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$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

R3 (29-June 2015)

CMLT5088EM
SURFACE MOUNT SILICON
DUAL, MATCHED
NPN TRANSISTOR



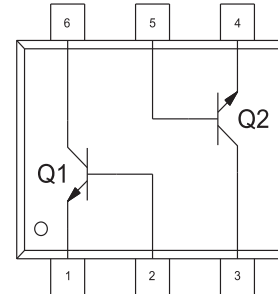
SOT-563 CASE - MECHANICAL OUTLINE



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)

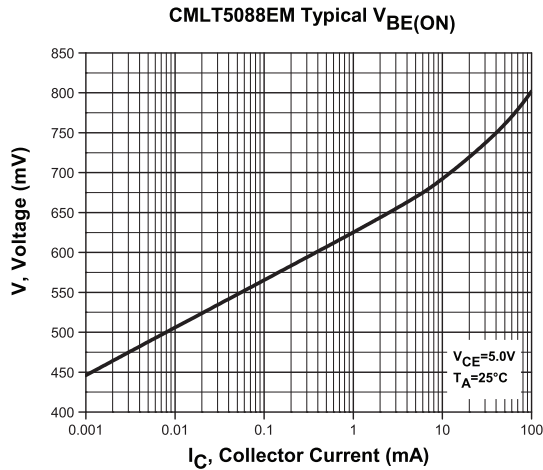
PIN CONFIGURATION



LEAD CODE:

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

MARKING CODE: 88M



R3 (29-June 2015)

CMLT5088EM

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



SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

LIMITATIONS AND DAMAGES DISCLAIMER: In no event shall Central be liable for any collateral, indirect, punitive, incidental, consequential, or exemplary damages in connection with or arising out of a purchase order or contract or the use of products provided hereunder, regardless of whether Central has been advised of the possibility of such damages. Excluded damages shall include, but not be restricted to: cost of removal or reinstallation, rework, ancillary costs to the procurement of substitute products, loss of profits, loss of savings, loss of use, loss of data, or business interruption. No claim, suit, or action shall be brought against Central more than two (2) years after the related cause of action has occurred.

In no event shall Central's aggregate liability from any warranty, indemnity, or other obligation arising out of or in connection with a purchase order or contract, or any use of any Central product provided hereunder, exceed the total amount paid to Central for the specific products sold under a purchase order or contract with respect to which losses or damages are claimed. The existence of more than one (1) claim against the specific products sold to Buyer under a purchase order or contract shall not enlarge or extend this limit.

Buyer understands and agrees that the foregoing liability limitations are essential elements of a purchase order or contract and that in the absence of such limitations, the material and economic terms of the purchase order or contract would be substantially different.

R3 (29-June 2015)