



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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CMLT5078E NPN/PNP  
 CMLT5087E PNP/PNP  
 CMLT5088E NPN/PNP

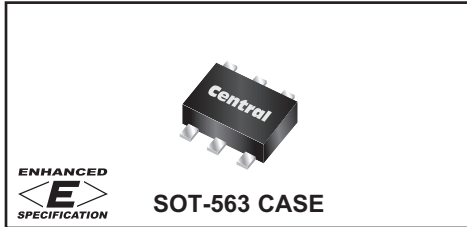
**ENHANCED SPECIFICATION  
 SURFACE MOUNT SILICON  
 DUAL TRANSISTORS**



www.centrasemi.com

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLT5078E, CMLT5087E, and CMLT5088E are surface mount silicon transistors with enhanced specifications designed for applications requiring high gain and low noise.



**MARKING CODES: CMLT5078E: L78  
 CMLT5087E: L87  
 CMLT5088E: L88 or 88**

MAXIMUM RATINGS: (T <sub>A</sub> =25°C)	SYMBOL		UNITS
◆ Collector-Base Voltage	V <sub>CB0</sub>	50	V
◆ Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
◆ Emitter-Base Voltage	V <sub>EBO</sub>	5.0	V
Continuous Collector Current	I <sub>C</sub>	100	mA
Power Dissipation	P <sub>D</sub>	350	mW
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150	°C
Thermal Resistance	θ <sub>JA</sub>	357	°C/W

**ELECTRICAL CHARACTERISTICS PER TRANSISTOR: (T<sub>A</sub>=25°C unless otherwise noted)**

SYMBOL	TEST CONDITIONS	MIN	TYP		MAX	UNITS
			NPN	PNP		
I <sub>CB0</sub>	V <sub>CB</sub> =20V				50	nA
I <sub>EBO</sub>	V <sub>EB</sub> =3.0V				50	nA
◆ BV <sub>CB0</sub>	I <sub>C</sub> =100μA	50	135	150		V
◆ BV <sub>CEO</sub>	I <sub>C</sub> =1.0mA	50	65	105		V
◆ BV <sub>EBO</sub>	I <sub>E</sub> =100μA	5.0	8.7	7.5		V
◆ V <sub>CE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		45	50	100	mV
◆◆ V <sub>CE(SAT)</sub>	I <sub>C</sub> =100mA, I <sub>B</sub> =10mA		110	225	400	mV
V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		700	700	800	mV
◆ h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =0.1mA	300	430	390	900	
h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA	300	435	380		
◆ h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =10mA	300	430	350		
◆◆ h <sub>FE</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =100mA	50	125	75		
◆ f <sub>T</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =500μA, f=20MHz	100				MHz
C <sub>ob</sub>	V <sub>CB</sub> =5.0V, I <sub>E</sub> =0, f=1.0MHz				4.0	pF
C <sub>ib</sub>	V <sub>BE</sub> =0.5V, I <sub>C</sub> =0, f=1.0MHz				15	pF
h <sub>fe</sub>	V <sub>CE</sub> =5.0V, I <sub>C</sub> =1.0mA, f=1.0kHz	350			1400	
NF	V <sub>CE</sub> =5.0V, I <sub>C</sub> =100μA, R <sub>S</sub> =10kΩ, f=10Hz to 15.7kHz				3.0	dB

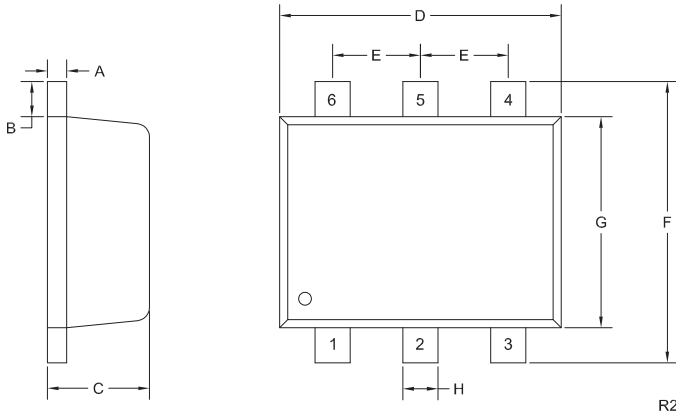
- ◆ Enhanced specification
- ◆◆ Additional Enhanced specification

R6 (29-June 2015)

**CMLT5078E NPN/PNP**  
**CMLT5087E PNP/PNP**  
**CMLT5088E NPN/PNP**  
**ENHANCED SPECIFICATION**  
**SURFACE MOUNT SILICON**  
**DUAL TRANSISTORS**



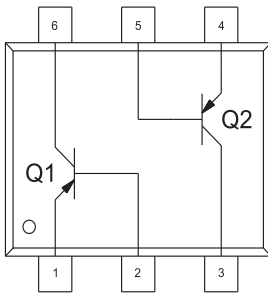
**SOT-563 CASE - MECHANICAL OUTLINE**



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

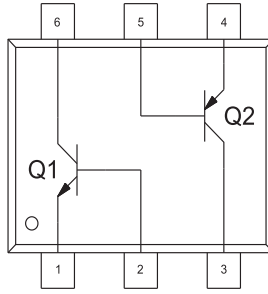
SOT-563 (REV: R2)

**PIN CONFIGURATIONS**



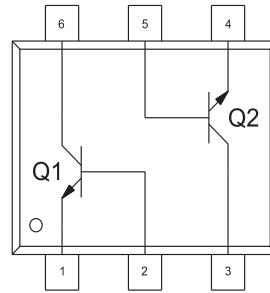
**CMLT5087E**

**MARKING CODE: L87**



**CMLT5078E**

**MARKING CODE: L78**



**CMLT5088E**

**MARKING CODE: L88 or 88**

**LEAD CODE:**

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

R6 (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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