



**THE DATASHEET OF  
CMLT5087E TR PBFREE**

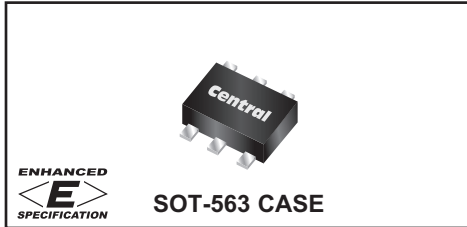


CMLT5078E NPN/PNP  
 CMLT5087E PNP/PNP  
 CMLT5088E NPN/PNP

**ENHANCED SPECIFICATION  
 SURFACE MOUNT SILICON  
 DUAL TRANSISTORS**



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**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)**

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

SYMBOL		UNITS
V <sub>CB0</sub>	50	V
V <sub>CEO</sub>	50	V
V <sub>EBO</sub>	5.0	V
I <sub>C</sub>	100	mA
P <sub>D</sub>	350	mW
T <sub>J</sub> , T <sub>stg</sub>	-65 to +150	°C
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

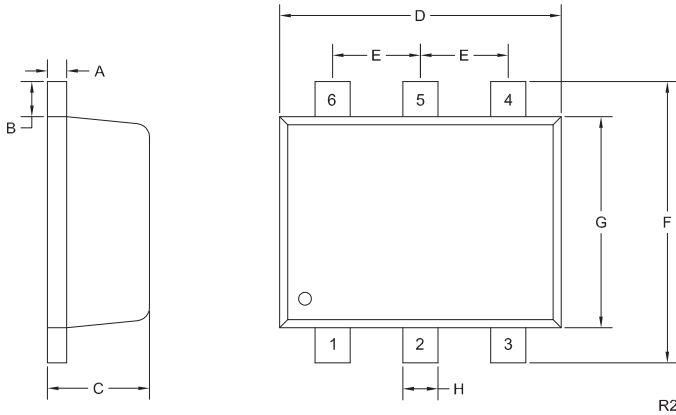
- ◆ Enhanced specification
- ◆◆ Additional Enhanced specification

R6 (29-June 2015)

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



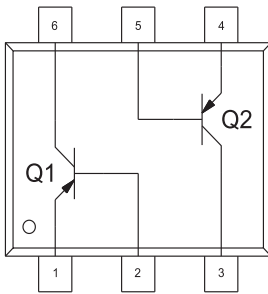
**SOT-563 CASE - MECHANICAL OUTLINE**



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

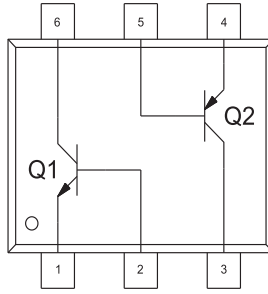
SOT-563 (REV: R2)

**PIN CONFIGURATIONS**



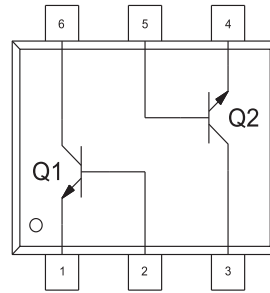
**CMLT5087E**

**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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