

CMLT5078E  
CMLT5087E  
CMLT5088E

**ENHANCED SPECIFICATION  
SURFACE MOUNT  
SILICON TRANSISTORS**

**ENHANCED**  
  
**SPECIFICATION**

**PICOmini™**



**SOT-563 CASE**

# Central™

**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLT5078E, CMLT5087E, and CMLT5088E, are Silicon transistors in a PICOmini™ surface mount package with enhanced specifications designed for applications requiring high gain and low noise.

The following configurations are available:

**CMLT5078E Dual, Complementary**    **Marking Code: L78**  
**CMLT5087E Dual, PNP**                    **Marking Code: L87**  
**CMLT5088E Dual, NPN**                    **Marking Code: L88**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

	SYMBOL		UNITS
◆ Collector-Base Voltage	$V_{CBO}$	50	V
◆ Collector-Emitter Voltage	$V_{CEO}$	50	V
◆ Emitter-Base Voltage	$V_{EBO}$	5.0	V
Collector Current	$I_C$	100	mA
Power Dissipation	$P_D$	350	mW
Operating and Storage			
Junction Temperature	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
Thermal Resistance	$\Theta_{JA}$	357	$^\circ\text{C/W}$

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

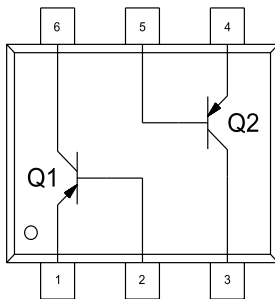
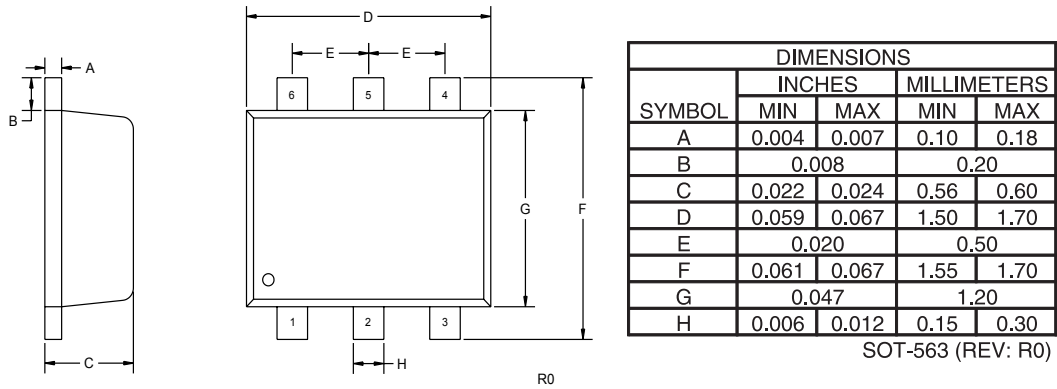
SYMBOL	TEST CONDITIONS	TYP			UNITS
		MIN	NPN	PNP	
$I_{CBO}$	$V_{CB}=20\text{V}$				50 nA
$I_{EBO}$	$V_{EB}=3.0\text{V}$				50 nA
◆ $BV_{CBO}$	$I_C=100\mu\text{A}$	50	135	150	V
◆ $BV_{CEO}$	$I_C=1.0\text{mA}$	50	65	105	V
◆ $BV_{EBO}$	$I_E=100\mu\text{A}$	5.0	8.7	7.5	V
◆ $V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		45	50	100 mV
◆◆ $V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		110	225	400 mV
	$V_{BE(SAT)}, I_C=10\text{mA}, I_B=1.0\text{mA}$		700	700	800 mV
◆ $h_{FE}$	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	300	430	390	900
	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	300	435	380	
◆ $h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	300	430	350	
◆◆ $h_{FE}$	$V_{CE}=5.0\text{V}, I_C=100\text{mA}$	50	125	75	
◆ $f_T$	$V_{CE}=5.0\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$	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

- ◆ Enhanced specification.
- ◆◆ Additional Enhanced specification.

R1 ( 22-April 2002)

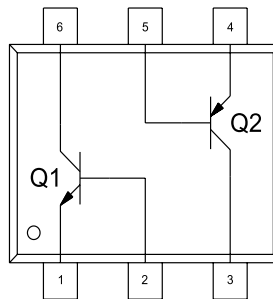
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**SOT-563 CASE - MECHANICAL OUTLINE**



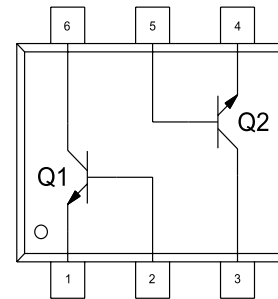
**CMLT5087E**

Marking Code: L87



**CMLT5078E**

Marking Code: L78



**CMLT5088E**

Marking Code: L88

LEAD CODE (For All Devices) :

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