

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

**ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
DUAL TRANSISTORS**



SOT-563 CASE



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

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

SYMBOL		UNITS
V_{CB0}	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	$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	TYP		MAX	UNITS
			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	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	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

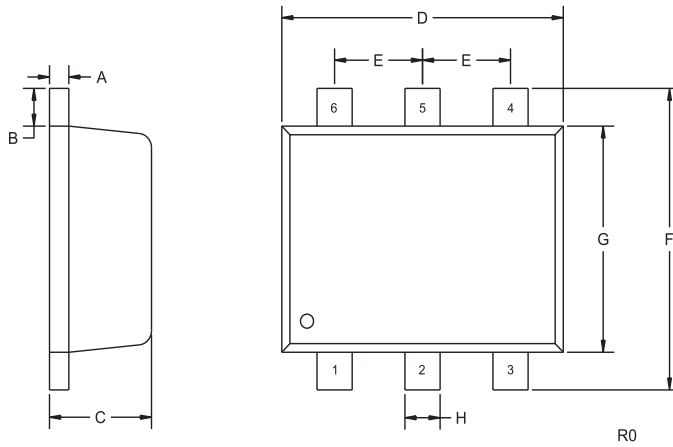
R4 (22-March 2013)

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

**ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
DUAL TRANSISTORS**



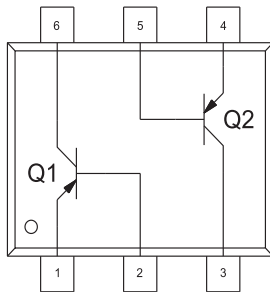
SOT-563 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.007	0.10	0.18
B	0.008		0.20	
C	0.022	0.024	0.56	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.061	0.067	1.55	1.70
G	0.047		1.20	
H	0.006	0.012	0.15	0.30

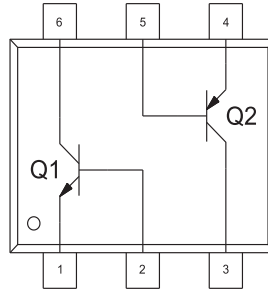
SOT-563 (REV: R0)

PIN CONFIGURATIONS



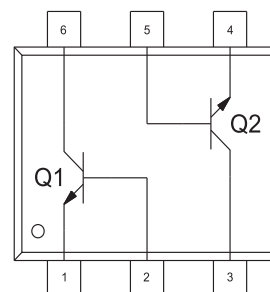
CMLT5087E

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

R4 (22-March 2013)