

CMPT5087E PNP
CMPT5088E NPN

**ENHANCED SPECIFICATION
SURFACE MOUNT
COMPLEMENTARY
SILICON TRANSISTORS**

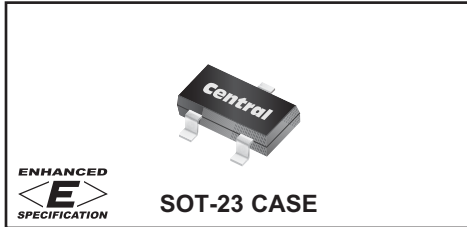


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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5087E and CMPT5088E, are Silicon transistors in an epoxy molded surface mount package with enhanced specifications designed for applications requiring high gain and low noise.

**MARKING CODES: CMPT5087E: C2QE
CMPT5088E: C1QE**



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

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	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS: ($T_A=25^\circ\text{C}$ 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	
◆ 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

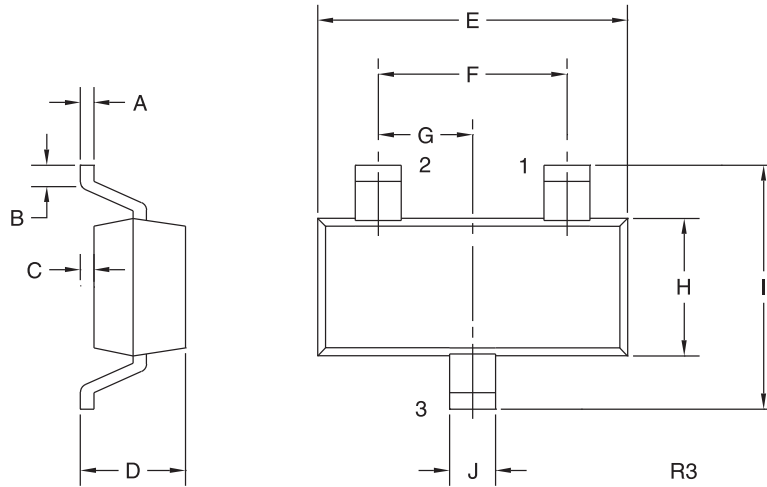
R1 (1-February 2010)

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**ENHANCED SPECIFICATION
 SURFACE MOUNT
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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Base
- 2) Emitter
- 3) Collector

MARKING CODES:

CMPT5087E: C2QE
CMPT5088E: C1QE

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

R1 (1-February 2010)