

CMPT5087E PNP  
CMPT5088E NPN

**ENHANCED SPECIFICATION  
SURFACE MOUNT  
COMPLEMENTARY  
SILICON TRANSISTORS**



SOT-23 CASE



www.centrasemi.com

**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		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	$^\circ\text{C}$
$\theta_{JA}$	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

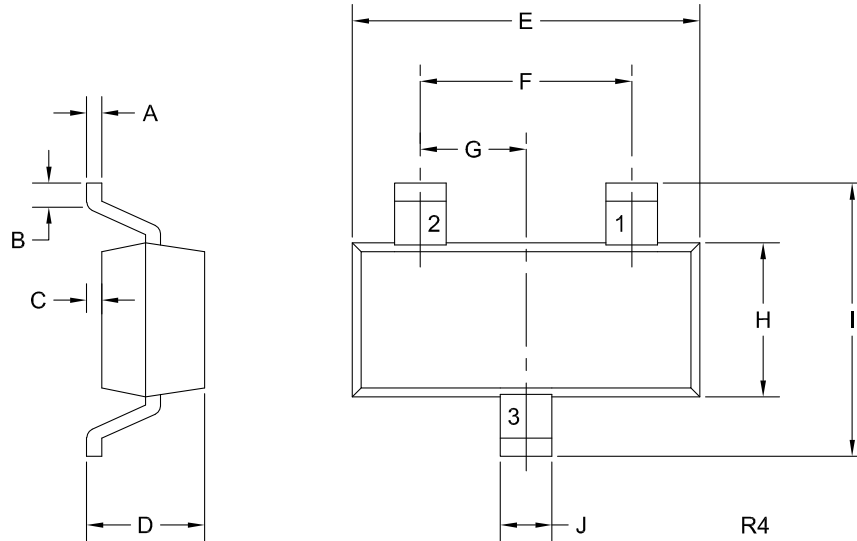
R2 (11-August 2021)

CMPT5087E PNP  
 CMPT5088E NPN



**ENHANCED SPECIFICATION  
 SURFACE MOUNT  
 COMPLEMENTARY  
 SILICON TRANSISTORS**

**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODES:**

**CMPT5087E: C2QE  
 CMPT5088E: C1QE**

SYMBOL	DIMENSIONS			
	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	0.044	0.89	1.12
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	0.104	2.10	2.64
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R4)

R2 (11-August 2021)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



---

### 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

---

### 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

---

### 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).

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)