

CMKT5078 NPN/PNP
 CMKT5087 PNP/PNP
 CMKT5088 NPN/NPN

**SURFACE MOUNT
 DUAL SILICON TRANSISTORS**

ULTRAmi™



SOT-363 CASE



www.centrasemi.com

DESCRIPTION:

The Central Semiconductor CMKT5078 (one each NPN and PNP complementary), CMKT5087 (two single PNP), and CMKT5088 (two single NPN) are combinations of transistors in a space saving SOT-363 ULTRAmi™ package, designed for applications requiring high gain and low noise.

CMKT5078 MARKING CODE: K78

CMKT5087 MARKING CODE: K87

CMKT5088 MARKING CODE: K88

FEATURES:

- ULTRAmi™ space saving package
- Two NPN (5088) or Two PNP (5087) Transistors in a single package
- One NPN (5088) and one PNP (5087) complementary Transistor in a single package

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	NPN	PNP	UNITS
V_{CB0}	35	50	V
V_{CEO}	30	50	V
V_{EBO}	4.5	3.0	V
I_C		50	mA
P_D		350	mW
T_J, T_{stg}		-65 to +150	$^\circ\text{C}$
θ_{JA}		357	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	NPN		PNP		UNITS
		MIN	MAX	MIN	MAX	
I_{CBO}	$V_{CB}=10\text{V}$	-	-	-	10	nA
I_{CBO}	$V_{CB}=35\text{V}$	-	-	-	50	nA
I_{CBO}	$V_{CB}=20\text{V}$	-	50	-	-	nA
I_{EBO}	$V_{EB}=3.0\text{V}$	-	50	-	-	nA
BV_{CBO}	$I_C=100\mu\text{A}$	35	-	50	-	V
BV_{CEO}	$I_C=1.0\text{mA}$	30	-	50	-	V
BV_{EBO}	$I_E=100\mu\text{A}$	4.5	-	3.0	-	V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	-	0.50	-	0.30	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$	-	0.80	-	0.85	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=0.1\text{mA}$	300	900	250	800	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	350	-	250	-	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	300	-	250	-	
f_T	$V_{CE}=5.0\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$	50	-	40	-	MHz
C_{ob}	$V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$	-	4.0	-	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	250	900	
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	-	2.0	dB

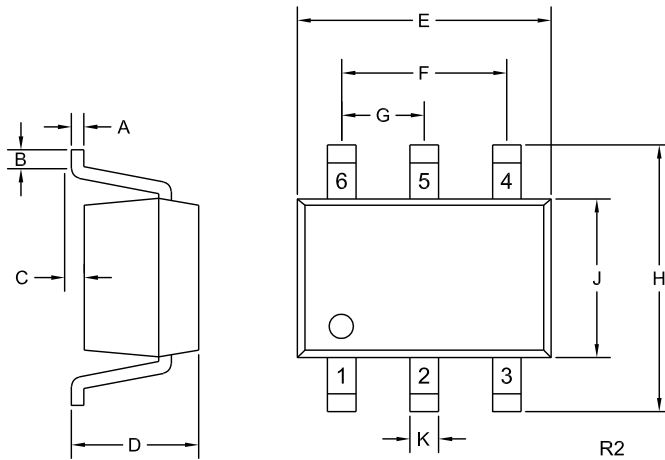
R4 (13-January 2010)

CMKT5078 NPN/PNP
 CMKT5087 PNP/PNP
 CMKT5088 NPN/NPN



**SURFACE MOUNT
 DUAL SILICON TRANSISTORS**

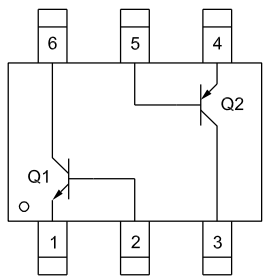
SOT-363 CASE - MECHANICAL OUTLINE



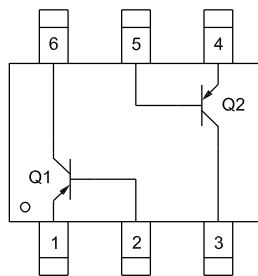
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.010	0.10	0.25
B	0.005	-	0.12	-
C	0.000	0.004	0.00	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.075	0.091	1.90	2.30
J	0.043	0.055	1.10	1.40
K	0.006	0.012	0.15	0.30

SOT-363 (REV: R2)

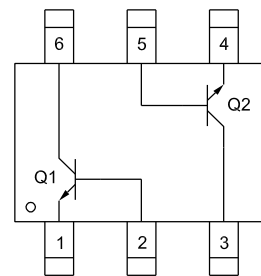
PIN CONFIGURATIONS



**CMKT5078
 (NPN/PNP)
 MARKING CODE: K78**



**CMKT5087
 (PNP/PNP)
 MARKING CODE: K87**



**CMKT5088
 (NPN/NPN)
 MARKING CODE: K88**

LEAD CODES:

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

R4 (13-January 2010)

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 (2nd 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

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
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