



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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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°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	°C
θ _{JA}		357	°C/W

ELECTRICAL CHARACTERISTICS PER TRANSISTOR: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	NPN		PNP		UNITS
		MIN	MAX	MIN	MAX	
I _{CB0}	V _{CB} =10V	-	-	-	10	nA
I _{CB0}	V _{CB} =35V	-	-	-	50	nA
I _{CB0}	V _{CB} =20V	-	50	-	-	nA
I _{EBO}	V _{EB} =3.0V	-	50	-	-	nA
BV _{CB0}	I _C =100μA	35	-	50	-	V
BV _{CEO}	I _C =1.0mA	30	-	50	-	V
BV _{EBO}	I _E =100μA	4.5	-	3.0	-	V
V _{CE(SAT)}	I _C =10mA, I _B =1.0mA	-	0.50	-	0.30	V
V _{BE(SAT)}	I _C =10mA, I _B =1.0mA	-	0.80	-	0.85	V
h _{FE}	V _{CE} =5.0V, I _C =0.1mA	300	900	250	800	
h _{FE}	V _{CE} =5.0V, I _C =1.0mA	350	-	250	-	
h _{FE}	V _{CE} =5.0V, I _C =10mA	300	-	250	-	
f _T	V _{CE} =5.0V, I _C =500μA, f=20MHz	50	-	40	-	MHz
C _{ob}	V _{CB} =5.0V, I _E =0, f=1.0MHz	-	4.0	-	4.0	pF
C _{ib}	V _{BE} =0.5V, I _C =0, f=1.0MHz	-	15	-	-	pF
h _{fe}	V _{CE} =5.0V, I _C =1.0mA, f=1.0kHz	350	1400	250	900	
NF	V _{CE} =5.0V, I _C =100μA, R _S =10kΩ, f=10Hz to 15.7kHz	-	3.0	-	2.0	dB

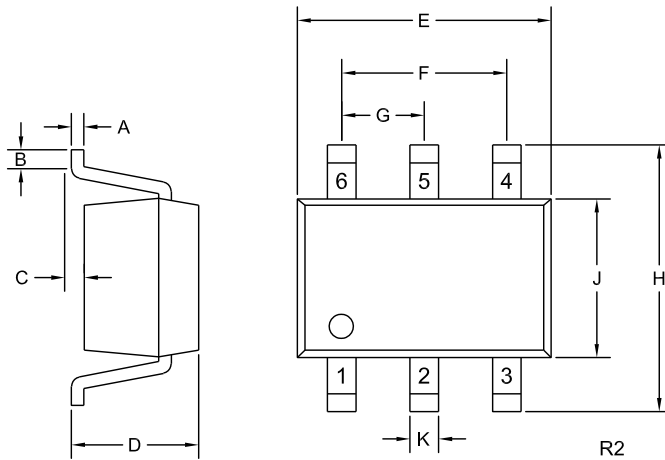
R4 (13-January 2010)

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



**SURFACE MOUNT
 DUAL SILICON TRANSISTORS**

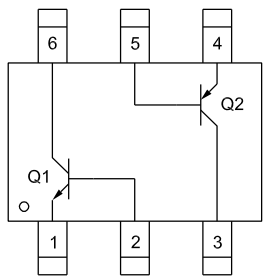
SOT-363 CASE - MECHANICAL OUTLINE



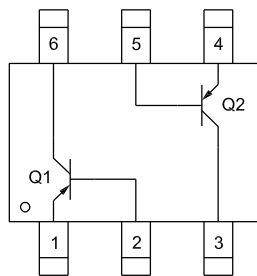
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.010	0.10	0.25
B	0.005	-	0.12	-
C	0.000	0.004	0.00	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.075	0.091	1.90	2.30
J	0.043	0.055	1.10	1.40
K	0.006	0.012	0.15	0.30

SOT-363 (REV: R2)

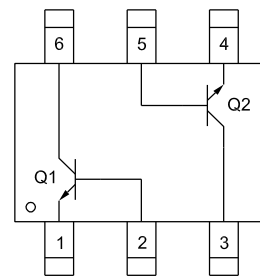
PIN CONFIGURATIONS



**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).

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