

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

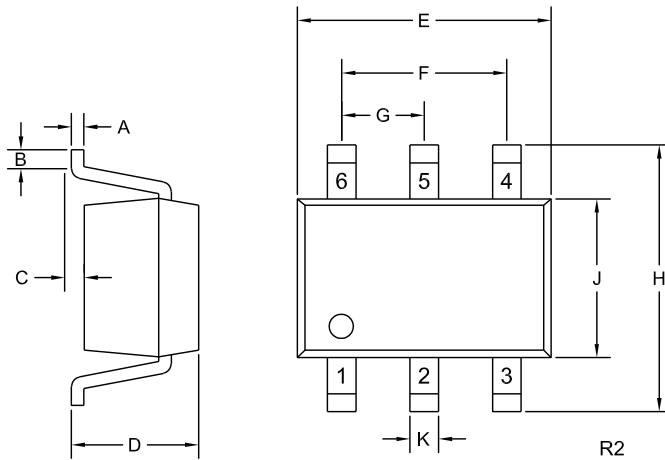
R4 (13-January 2010)

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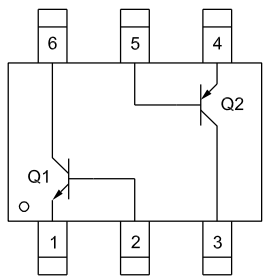
SOT-363 CASE - MECHANICAL OUTLINE



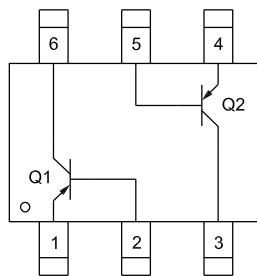
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.004	0.010	0.10	0.25
B	0.005	-	0.12	-
C	0.000	0.004	0.00	0.10
D	0.031	0.043	0.80	1.10
E	0.071	0.087	1.80	2.20
F	0.051		1.30	
G	0.026		0.65	
H	0.075	0.091	1.90	2.30
J	0.043	0.055	1.10	1.40
K	0.006	0.012	0.15	0.30

SOT-363 (REV: R2)

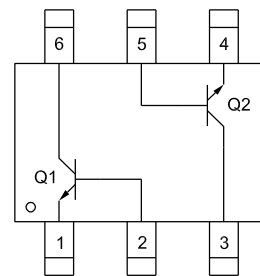
PIN CONFIGURATIONS



**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

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