

CMKT3920

SURFACE MOUNT SILICON  
DUAL, SMALL SIGNAL  
NPN SWITCHING TRANSISTOR

ULTRAm<sup>ini</sup>™



SOT-363 CASE

**Central**  
Semiconductor Corp.

[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The Central Semiconductor CMKT3920 (two single NPN transistors) is a dual combination in a space saving SOT-363 ULTRAm<sup>ini</sup>™ package, designed for small signal general purpose amplifier and switching applications.

**MARKING CODE: K20**

**APPLICATIONS:**

- Load switching
- Small signal amplification
- Lamp and relay drivers
- MOSFET gate drive

**FEATURES:**

- ULTRAm<sup>ini</sup>™ space saving package containing two 3920 NPN transistors

**MAXIMUM RATINGS:** (T<sub>A</sub>=25°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 <sub>CBO</sub>                  | 60          | V     |
| V <sub>CEO</sub>                  | 50          | V     |
| V <sub>EBO</sub>                  | 7.0         | V     |
| I <sub>C</sub>                    | 200         | mA    |
| P <sub>D</sub>                    | 350         | mW    |
| T <sub>J</sub> , T <sub>stg</sub> | -65 to +150 | °C    |
| θ <sub>JA</sub>                   | 357         | °C/W  |

**ELECTRICAL CHARACTERISTICS PER TRANSISTOR:** (T<sub>A</sub>=25°C unless otherwise noted)

| SYMBOL               | TEST CONDITIONS                                      | MIN | MAX  | UNITS |
|----------------------|--|-----|------|-------|
| I <sub>CBO</sub>     | V <sub>CB</sub> =60V                                 |     | 100  | nA    |
| I <sub>EBO</sub>     | V <sub>EB</sub> =7.0V                                |     | 100  | nA    |
| BV <sub>CBO</sub>    | I <sub>C</sub> =50μA                                 | 60  |      | V     |
| BV <sub>CEO</sub>    | I <sub>C</sub> =1.0mA                                | 50  |      | V     |
| BV <sub>EBO</sub>    | I <sub>E</sub> =50μA                                 | 7.0 |      | V     |
| V <sub>CE(SAT)</sub> | I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA          |     | 0.4  | V     |
| V <sub>BE(SAT)</sub> | I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA          |     | 0.95 | V     |
| h <sub>FE</sub>      | V <sub>CE</sub> =6.0V, I <sub>C</sub> =1.0mA         | 120 | 560  |       |
| f <sub>T</sub>       | V <sub>CE</sub> =20V, I <sub>C</sub> =10mA, f=100MHz | 300 |      | MHz   |
| C <sub>ob</sub>      | V <sub>CB</sub> =12V, I <sub>E</sub> =0, f=1.0MHz    |     | 3.5  | pF    |

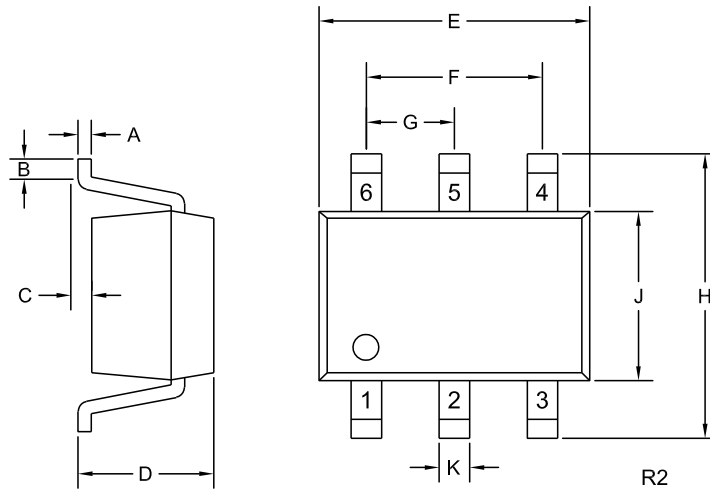
R1 (5-January 2012)

CMKT3920

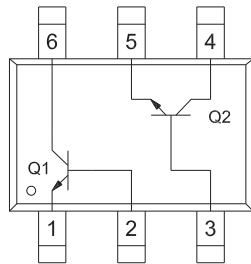
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SOT-363 CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



LEAD CODE:

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

MARKING CODE: K20

DIMENSIONS

| 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)

R1 (5-January 2012)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### 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

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### 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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### CONTACT US

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