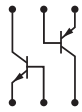


CMKT2207

**SURFACE MOUNT
COMPLEMENTARY SILICON
TRANSISTORS**

ULTRAmulti™



SOT-363 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMKT2207 consists of one 2222A NPN transistor and an individually isolated complementary 2907A PNP transistor, manufactured by the epitaxial planar process and epoxy molded in an SOT-363 surface mount package. This ULTRAmulti™ device has been designed for small signal general purpose and switching applications.

MARKING CODE: K70

MAXIMUM RATINGS: (T_A=25°C)

| | | | | |
|--|-----------------------------------|-------------|-----|------|
| Collector-Base Voltage | V _{CBO} | 75 | 60 | V |
| Collector-Emitter Voltage | V _{CEO} | 40 | 60 | V |
| Emitter-Base Voltage | V _{EBO} | 6.0 | 5.0 | V |
| Continuous Collector Current | I _C | 600 | | mA |
| Power Dissipation | P _D | 350 | | mW |
| Operating and Storage Junction Temperature | T _J , T _{stg} | -65 to +150 | | °C |
| Thermal Resistance | θ _{JA} | 357 | | °C/W |

| SYMBOL | NPN (Q1) | PNP (Q2) | UNITS |
|-----------------------------------|-------------|----------|-------|
| V _{CBO} | 75 | 60 | V |
| V _{CEO} | 40 | 60 | V |
| V _{EBO} | 6.0 | 5.0 | V |
| I _C | 600 | | 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 (Q1) | | PNP (Q2) | | UNITS |
|----------------------|--|----------|-----|----------|-----|-------|
| | | MIN | MAX | MIN | MAX | |
| I _{CBO} | V _{CB} =60V | - | 10 | - | - | nA |
| I _{CBO} | V _{CB} =50V | - | - | - | 10 | nA |
| I _{CBO} | V _{CB} =60V, T _A =125°C | - | 10 | - | - | nA |
| I _{CBO} | V _{CB} =50V, T _A =125°C | - | - | - | 10 | nA |
| I _{EBO} | V _{EB} =3.0V | - | 10 | - | - | nA |
| I _{CEV} | V _{CE} =60V, V _{EB(OFF)} =3.0V | - | 10 | - | - | nA |
| I _{CEV} | V _{CE} =30V, V _{EB(OFF)} =500mV | - | - | - | 50 | nA |
| BV _{CBO} | I _C =10μA | 75 | - | 60 | - | V |
| BV _{CEO} | I _C =10mA | 40 | - | 60 | - | V |
| BV _{EBO} | I _E =10μA | 6.0 | - | 5.0 | - | V |
| V _{CE(SAT)} | I _C =150mA, I _B =15mA | - | 0.3 | - | 0.4 | V |
| V _{CE(SAT)} | I _C =500mA, I _B =50mA | - | 1.0 | - | 1.6 | V |
| V _{BE(SAT)} | I _C =150mA, I _B =15mA | 0.6 | 1.2 | - | 1.3 | V |
| V _{BE(SAT)} | I _C =500mA, I _B =50mA | - | 2.0 | - | 2.6 | V |
| h _{FE} | V _{CE} =10V, I _C =0.1mA | 35 | - | 75 | - | |
| h _{FE} | V _{CE} =10V, I _C =1.0mA | 50 | - | 100 | - | |
| h _{FE} | V _{CE} =10V, I _C =10mA | 75 | - | 100 | - | |
| h _{FE} | V _{CE} =10V, I _C =150mA | 100 | 300 | 100 | 300 | |
| h _{FE} | V _{CE} =1.0V, I _C =150mA | 50 | - | - | - | |
| h _{FE} | V _{CE} =10V, I _C =500mA | 40 | - | 50 | - | |
| f _T | V _{CE} =20V, I _C =20mA, f=100MHz | 300 | - | - | - | MHz |
| f _T | V _{CE} =20V, I _C =50mA, f=100MHz | - | - | 200 | - | MHz |
| C _{ob} | V _{CB} =10V, I _E =0, f=1.0MHz | - | 8.0 | - | 8.0 | pF |
| C _{ib} | V _{EB} =0.5V, I _C =0, f=1.0MHz | - | 25 | - | - | pF |

R4 (13-January 2010)

CMKT2207

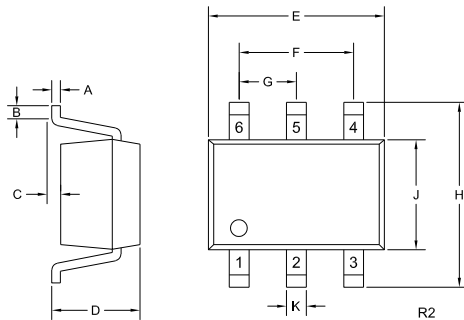
**SURFACE MOUNT
COMPLEMENTARY SILICON
TRANSISTORS**



ELECTRICAL CHARACTERISTICS PER TRANSISTOR - Continued: (T_A=25°C)

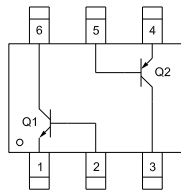
| SYMBOL | TEST CONDITIONS | NPN (Q1) | | PNP (Q2) | | UNITS |
|------------------|---|----------|------|----------|-----|-------------------|
| | | MIN | MAX | MIN | MAX | |
| C _{ib} | V _{EB} =2.0V, I _C =0, f=1.0MHz | - | - | - | 30 | pF |
| h _{ie} | V _{CE} =10V, I _C =1.0mA, f=1.0kHz | 2.0 | 8.0 | - | - | kΩ |
| h _{ie} | V _{CE} =10V, I _C =10mA, f=1.0kHz | 0.25 | 1.25 | - | - | kΩ |
| h _{re} | V _{CE} =10V, I _C =1.0mA, f=1.0kHz | - | 8.0 | - | - | x10 ⁻⁴ |
| h _{re} | V _{CE} =10V, I _C =10mA, f=1.0kHz | - | 4.0 | - | - | x10 ⁻⁴ |
| h _{fe} | V _{CE} =10V, I _C =1.0mA, f=1.0kHz | 50 | 300 | - | - | |
| h _{fe} | V _{CE} =10V, I _C =10mA, f=1.0kHz | 75 | 375 | - | - | |
| h _{oe} | V _{CE} =10V, I _C =1.0mA, f=1.0kHz | 5.0 | 35 | - | - | μS |
| h _{oe} | V _{CE} =10V, I _C =10mA, f=1.0kHz | 25 | 200 | - | - | μS |
| rb _{Cc} | V _{CB} =10V, I _E =20mA, f=31.8MHz | - | 150 | - | - | ps |
| NF | V _{CE} =10V, I _C =100μA, R _S =1.0kΩ, f=1.0kHz | - | 4.0 | - | - | dB |
| t _{on} | V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA | - | - | - | 45 | ns |
| t _d | V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA | - | 10 | - | 10 | ns |
| t _r | V _{CC} =30V, V _{BE} =0.5V, I _C =150mA, I _{B1} =15mA | - | 25 | - | 40 | ns |
| t _{off} | V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA | - | - | - | 100 | ns |
| t _s | V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA | - | 225 | - | - | ns |
| t _s | V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA | - | - | - | 80 | ns |
| t _f | V _{CC} =30V, I _C =150mA, I _{B1} =I _{B2} =15mA | - | 60 | - | - | ns |
| t _f | V _{CC} =6.0V, I _C =150mA, I _{B1} =I _{B2} =15mA | - | - | - | 30 | ns |

SOT-363 CASE - MECHANICAL OUTLINE



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|-------------|------|
| | 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)



LEAD CODE:

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

MARKING CODE: K70

R4 (13-January 2010)

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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

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

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.centalsemi.com

Worldwide Field Representatives:
www.centalsemi.com/wwreps

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