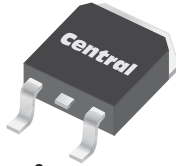


CQDD-12M
CQDD-12N

**SURFACE MOUNT
12 AMP SILICON TRIAC
600 THRU 800 VOLTS**



D²PAK CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CQDD-12M series type is an Epoxy Molded Silicon Triac designed for full wave AC control applications featuring gate triggering in all four (4) quadrants.

MARKING: FULL PART NUMBER

| MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$ unless otherwise noted) | SYMBOL | CQDD-12M | CQDD-12N | UNITS |
|--|-------------------|-----------------|-----------------|---------------------------|
| Peak Repetitive Off-State Voltage | V_{DRM} | 600 | 800 | V |
| RMS On-State Current ($T_C=90^\circ\text{C}$) | $I_T(\text{RMS})$ | | 12 | A |
| Peak One Cycle Surge, $t=8.3\text{ms}$ | I_{TSM} | | 80 | A |
| I^2t Value for Fusing, $t=8.3\text{ms}$ | I^2t | | 27 | A^2s |
| Peak Gate Power, $t_p=10\mu\text{s}$ | P_{GM} | | 40 | W |
| Average Gate Power Dissipation | $P_{G(AV)}$ | | 1.0 | W |
| Peak Gate Current, $t_p=10\mu\text{s}$ | I_{GM} | | 4.0 | A |
| Peak Gate Voltage, $t_p=10\mu\text{s}$ | V_{GM} | | 16 | V |
| Critical Rate of Rise of On-State Current Repetitive, $f=60\text{Hz}$ | di/dt | | 10 | $\text{A}/\mu\text{s}$ |
| Operating Junction Temperature | T_J | | -40 to +125 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | | -40 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | | 60 | $^\circ\text{C}/\text{W}$ |
| Thermal Resistance | θ_{JC} | | 2.7 | $^\circ\text{C}/\text{W}$ |

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

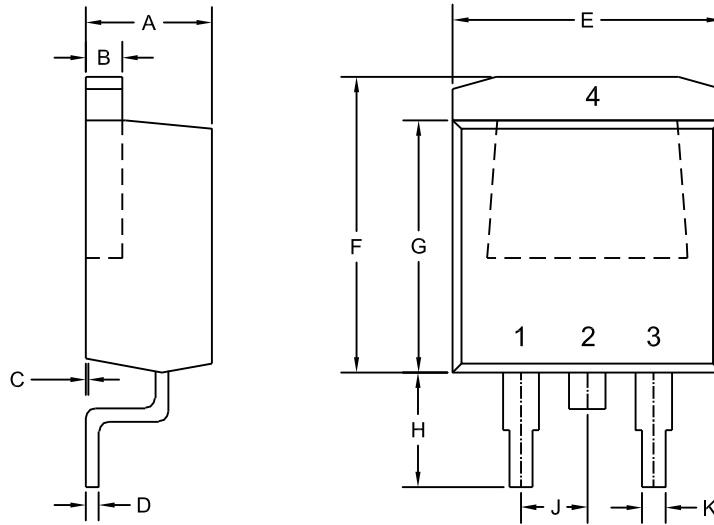
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------|---|------------|------------|------------|------------------------|
| I_{DRM} | Rated V_{DRM} | | | 10 | μA |
| I_{DRM} | Rated V_{DRM} , $T_C=125^\circ\text{C}$ | | | 500 | μA |
| I_{GT} | $V_D=12\text{V}$, $R_L=10\Omega$, QUAD I, II, III | | 9.9 | 20 | mA |
| I_{GT} | $V_D=12\text{V}$, $R_L=10\Omega$, QUAD IV | | 24.3 | 50 | mA |
| I_H | $I_T=100\text{mA}$ | | 14.1 | 25 | mA |
| V_{GT} | $V_D=12\text{V}$, $R_L=10\Omega$, QUAD I, II, III | | 1.10 | 1.50 | V |
| V_{GT} | $V_D=12\text{V}$, $R_L=10\Omega$, QUAD IV | | 2.10 | 2.50 | V |
| V_{TM} | $I_{TM}=17\text{A}$, $t_p=380\mu\text{s}$ | | 1.33 | 1.50 | V |
| dv/dt | $V_D=2/3 V_{DRM}$, $R_{GK}=\infty$, $T_C=125^\circ\text{C}$ | 10 | | | $\text{V}/\mu\text{s}$ |

CQDD-12M
CQDD-12N

SURFACE MOUNT
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D²PAK CASE - MECHANICAL OUTLINE



R2

LEAD CODE:

- 1) MT1
- 2) MT2
- 3) Gate
- 4) MT2

MARKING:

FULL PART NUMBER

| DIMENSIONS | | | | |
|------------|--------|-------|-------------|-------|
| SYMBOL | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.163 | 0.189 | 4.14 | 4.80 |
| B | 0.045 | 0.055 | 1.14 | 1.40 |
| C | 0.000 | 0.010 | 0.00 | 0.25 |
| D | 0.012 | 0.028 | 0.30 | 0.70 |
| E | 0.386 | 0.409 | 9.80 | 10.40 |
| F | 0.378 | 0.417 | 9.60 | 10.60 |
| G | 0.335 | 0.358 | 8.50 | 9.10 |
| H | 0.197 | 0.236 | 5.00 | 6.00 |
| J | 0.093 | 0.108 | 2.35 | 2.75 |
| K | 0.030 | 0.035 | 0.75 | 0.90 |

D2PAK (REV: R2)

R2 (12-February 2010)