

**CWDM305ND****SURFACE MOUNT SILICON  
DUAL N-CHANNEL  
ENHANCEMENT-MODE  
MOSFET****SOIC-8 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CWDM305ND is a dual, high current N-channel enhancement-mode silicon MOSFET designed for high speed pulsed amplifier and driver applications. This energy efficient MOSFET offers beneficially low  $r_{DS(ON)}$ , low gate charge, and low threshold voltage.

**MARKING CODE: C305****APPLICATIONS:**

- Load/Power switches
- DC-DC converter circuits
- Power management

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

|   |
|---|
| Drain-Source Voltage                              |
| Gate-Source Voltage                               |
| Continuous Drain Current (Steady State)           |
| Maximum Pulsed Drain Current, $t_p=10\mu\text{s}$ |
| Power Dissipation                                 |
| Operating and Storage Junction Temperature        |
| Thermal Resistance                                |

**FEATURES:**

- Low  $r_{DS(ON)}$
- High current
- Low gate charge

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $V_{DS}$       | 30          | V                  |
| $V_{GS}$       | 20          | V                  |
| $I_D$          | 5.8         | A                  |
| $I_{DM}$       | 23.2        | A                  |
| $P_D$          | 2.0         | W                  |
| $T_J, T_{stg}$ | -55 to +150 | $^\circ\text{C}$   |
| $\theta_{JA}$  | 62.5        | $^\circ\text{C/W}$ |

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

| SYMBOL               | TEST CONDITIONS  | MIN | TYP   | MAX   | UNITS         |
|----------------------|--|-----|-------|-------|---------------|
| $I_{GSSF}, I_{GSSR}$ | $V_{GS}=20\text{V}, V_{DS}=0$                            |     |       | 100   | nA            |
| $I_{DSS}$            | $V_{DS}=30\text{V}, V_{GS}=0$                            |     |       | 1.0   | $\mu\text{A}$ |
| $BV_{DSS}$           | $V_{GS}=0, I_D=250\mu\text{A}$                           | 30  |       |       | V             |
| $V_{GS(th)}$         | $V_{GS}=V_{DS}, I_D=250\mu\text{A}$                      | 1.0 |       | 3.0   | V             |
| $r_{DS(ON)}$         | $V_{GS}=10\text{V}, I_D=2.9\text{A}$                     |     | 0.024 | 0.030 | $\Omega$      |
| $r_{DS(ON)}$         | $V_{GS}=5.0\text{V}, I_D=2.9\text{A}$                    |     | 0.028 | 0.034 | $\Omega$      |
| $g_{FS}$             | $V_{DS}=5.0\text{V}, I_D=5.8\text{A}$                    |     | 12    |       | S             |
| $C_{rss}$            | $V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$           |     | 50    | 54    | pF            |
| $C_{iss}$            | $V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$           |     | 500   | 560   | pF            |
| $C_{oss}$            | $V_{DS}=10\text{V}, V_{GS}=0, f=1.0\text{MHz}$           |     | 52    | 90    | pF            |
| $Q_{g(tot)}$         | $V_{DD}=15\text{V}, V_{GS}=5.0\text{V}, I_D=5.8\text{A}$ |     | 4.2   | 6.3   | nC            |
| $Q_{gs}$             | $V_{DD}=15\text{V}, V_{GS}=5.0\text{V}, I_D=5.8\text{A}$ |     | 0.9   | 1.4   | nC            |
| $Q_{gd}$             | $V_{DD}=15\text{V}, V_{GS}=5.0\text{V}, I_D=5.8\text{A}$ |     | 1.4   | 2.1   | nC            |
| $t_{on}$             | $V_{DD}=15\text{V}, I_D=5.8\text{A}, R_G=10\Omega$       |     | 6.5   |       | ns            |
| $t_{off}$            | $V_{DD}=15\text{V}, I_D=5.8\text{A}, R_G=10\Omega$       |     | 8.5   |       | ns            |

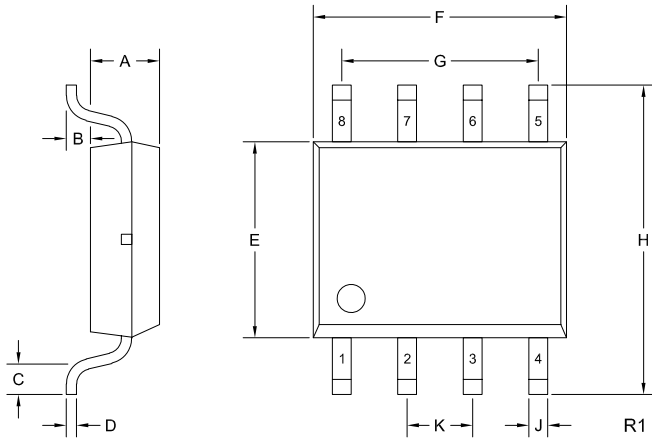
R4 (10-August 2018)

CWDM305ND

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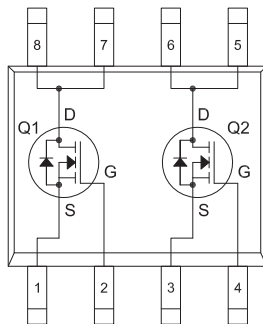
**SOIC-8 CASE - MECHANICAL OUTLINE**



| SYMBOL | INCHES |       | MILLIMETERS |       |
|--------|--------|-------|-------------|-------|
|        | MIN    | MAX   | MIN         | MAX   |
| A      | 0.055  | 0.061 | 1.392       | 1.554 |
| B      | 0.004  | 0.009 | 0.100       | 0.224 |
| C      | 0.016  | 0.035 | 0.40        | 0.90  |
| D      | 0.007  | 0.010 | 0.19        | 0.25  |
| E      | 0.145  | 0.157 | 3.80        | 4.00  |
| F      | 0.189  | 0.198 | 4.80        | 5.00  |
| G      | 0.150  |       | 3.81        |       |
| H      | 0.228  | 0.244 | 5.80        | 6.20  |
| J      | 0.013  | 0.020 | 0.33        | 0.51  |
| K      | 0.050  |       | 1.27        |       |

SOIC-8 (REV: R1)

**PIN CONFIGURATION**



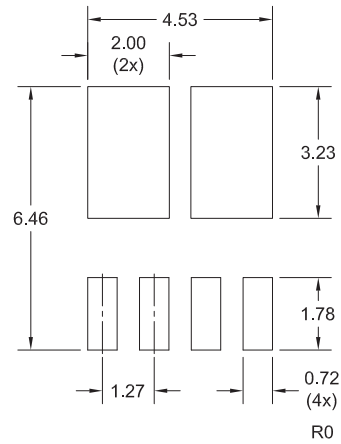
**LEAD CODE:**

- 1) Source Q1      5) Drain Q2
- 2) Gate Q1        6) Drain Q2
- 3) Source Q2      7) Drain Q1
- 4) Gate Q2        8) Drain Q1

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**SUGGESTED MOUNTING PADS**

(Dimensions in mm)

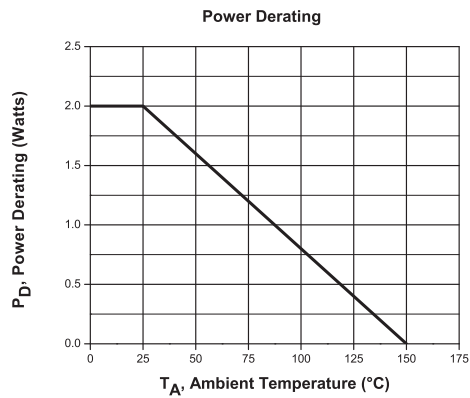
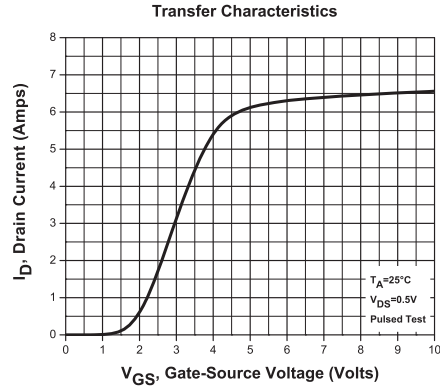
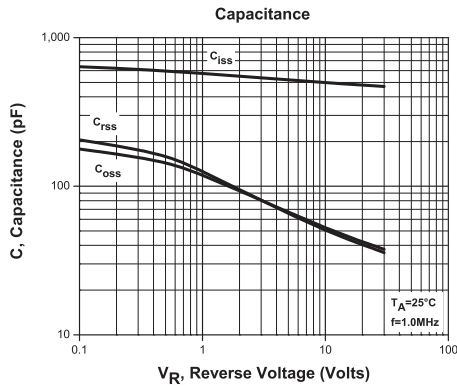
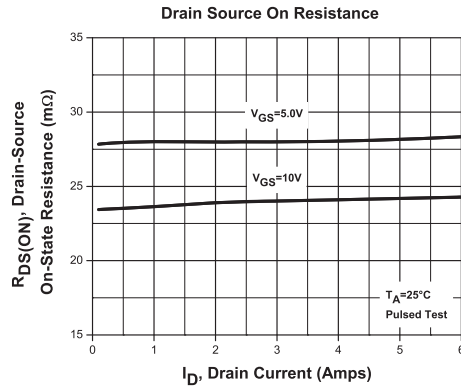
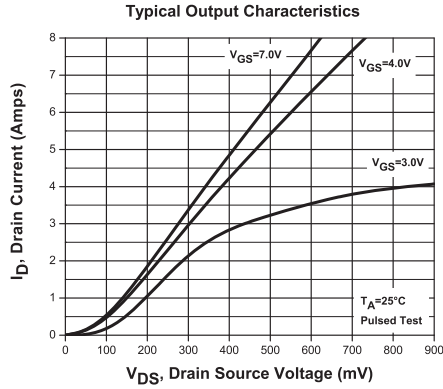


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**TYPICAL ELECTRICAL CHARACTERISTICS**



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## 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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