

CMPDM302PH
SURFACE MOUNT
P-CHANNEL
ENHANCEMENT-MODE
SILICON MOSFET



www.centrasemi.com



SOT-23F CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPDM302PH is a high current P-channel enhancement-mode silicon MOSFET, manufactured by the P-channel DMOS process, and is designed for high speed pulsed amplifier and driver applications. This MOSFET offers high current, low $r_{DS(ON)}$, low threshold voltage, and low leakage current.

MARKING CODE: 302C

APPLICATIONS:

- Load/Power switches
- Power supply converter circuits
- Battery powered portable equipment

FEATURES:

- Low $r_{DS(ON)}$ (0.129 Ω MAX @ $V_{GS}=2.5V$)
- High current ($I_D=2.4A$)
- Logic level compatibility

MAXIMUM RATINGS: ($T_A=25^\circ C$)

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

SYMBOL

| SYMBOL | | UNITS |
|----------------|-------------|--------------|
| V_{DS} | 30 | V |
| V_{GS} | 12 | V |
| I_D | 2.4 | A |
| I_{DM} | 9.6 | A |
| P_D | 350 | mW |
| T_J, T_{stg} | -55 to +150 | $^\circ C$ |
| θ_{JA} | 357 | $^\circ C/W$ |

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

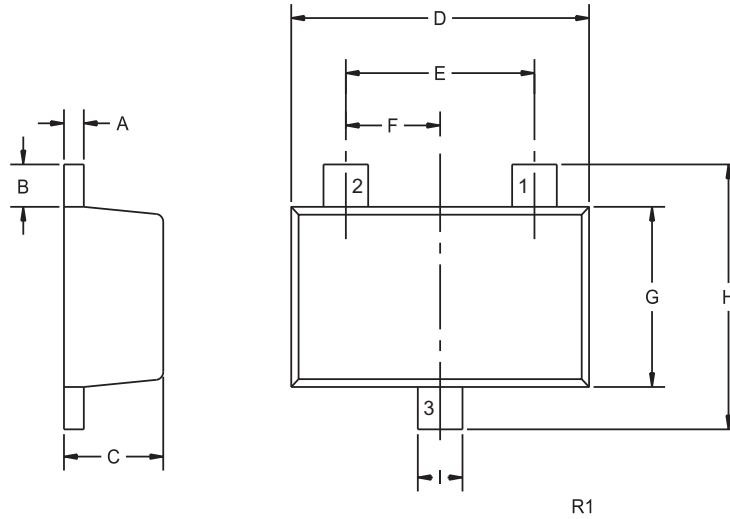
| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------------|--------------------------------------|-----|-------|-------|----------|
| I_{GSS}, I_{GSSR} | $V_{GS}=12V, V_{DS}=0$ | | | 100 | nA |
| I_{DSS} | $V_{DS}=20V, V_{GS}=0$ | | | 1.0 | μA |
| BV_{DSS} | $V_{GS}=0, I_D=250\mu A$ | 30 | | | V |
| $V_{GS(th)}$ | $V_{GS}=V_{DS}, I_D=250\mu A$ | 0.7 | | 1.4 | V |
| $r_{DS(ON)}$ | $V_{GS}=4.5V, I_D=1.2A$ | | 0.050 | 0.091 | Ω |
| $r_{DS(ON)}$ | $V_{GS}=2.5V, I_D=1.2A$ | | 0.066 | 0.129 | Ω |
| g_{FS} | $V_{DS}=5.0V, I_D=2.4A$ | | 4.6 | | S |
| C_{rss} | $V_{DS}=10V, V_{GS}=0, f=1.0MHz$ | | 69 | | pF |
| C_{iss} | $V_{DS}=10V, V_{GS}=0, f=1.0MHz$ | | 800 | | pF |
| C_{oss} | $V_{DS}=10V, V_{GS}=0, f=1.0MHz$ | | 62 | | pF |
| $Q_g(tot)$ | $V_{DD}=10V, V_{GS}=5.0V, I_D=2.4A$ | | 7.0 | 9.6 | nC |
| Q_{gs} | $V_{DD}=10V, V_{GS}=5.0V, I_D=2.4A$ | | 1.4 | 4.2 | nC |
| Q_{gd} | $V_{DD}=10V, V_{GS}=5.0V, I_D=2.4A$ | | 1.5 | 2.6 | nC |
| t_{on} | $V_{DD}=10V, I_D=2.4A, R_G=10\Omega$ | | 12 | | ns |
| t_{off} | $V_{DD}=10V, I_D=2.4A, R_G=10\Omega$ | | 17 | | ns |

R1 (11-December 2012)

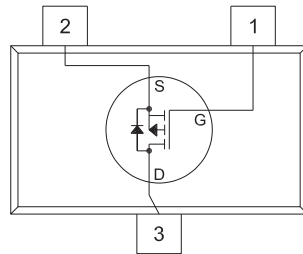
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SOT-23F CASE - MECHANICAL OUTLINE



PIN CONFIGURATION



| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.004 | 0.008 | 0.10 | 0.20 |
| B | 0.012 | 0.020 | 0.30 | 0.50 |
| C | 0.031 | 0.039 | 0.80 | 1.00 |
| D | 0.110 | 0.118 | 2.80 | 3.00 |
| E | 0.075 | | 1.90 | |
| F | 0.037 | | 0.95 | |
| G | 0.059 | 0.067 | 1.50 | 1.70 |
| H | 0.091 | 0.098 | 2.30 | 2.50 |
| I | 0.014 | 0.018 | 0.35 | 0.45 |

SOT-23F (REV: R1)

LEAD CODE:

- 1) Gate
- 2) Source
- 3) Drain

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