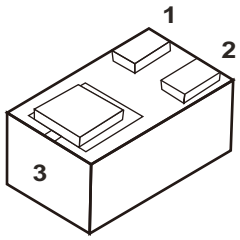
# CMS3134KQA-HF

## N-Channel
## RoHS Device
## Halogen Free




## Features

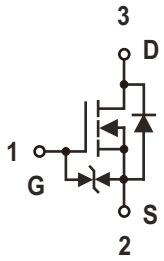
- Surface mount package
- N-Channel switch with low $R_{DS}$(on)
- Operated at low logic level gate drive
- Complementary to CMS3139KQA-HF

## Mechanical data

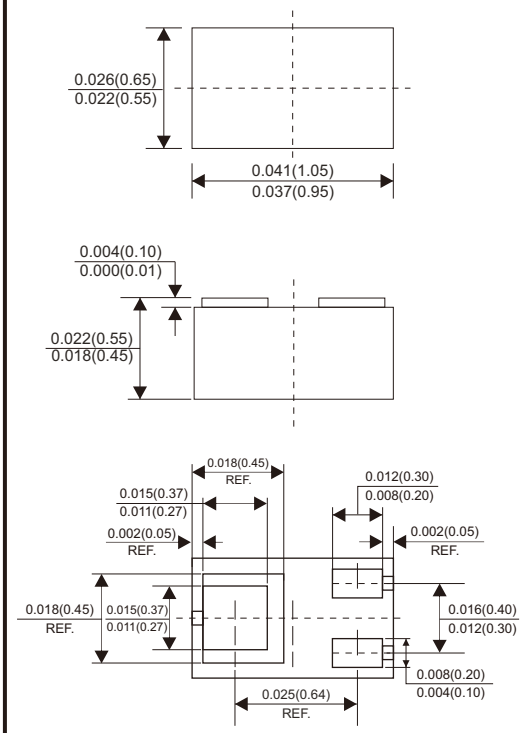
- Case: WBFBP-03E, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

## Circuit Diagram

- 1. G : Gate
- 2. S : Source
- 3. D : Drain




**WBFBP-03E (1.0X0.6X0.5)**




Dimensions in inches and (millimeter)

## Maximum Rating (at Ta=25 °C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Drain-Source voltage | $V_{DS}$ | 20 | V |
| Typical Gate-Source voltage | $V_{GS}$ | ±12 | V |
| Continuous drain current (note1) | $I_D$ | 0.75 | A |
| Pulsed drain current (tp=10us) | $I_{DM}$ | 1.80 | A |
| Power dissipation (note2) | $P_D$ | 100 | mW |
| Thermal resistance from junction to ambient (note1) | $R_{\Theta JA}$ | 1250 | °C/W |
| Junction temperature | $T_J$ | 150 | °C |
| Storage temperature range | $T_{STG}$ | -55 to +150 | °C |
| Lead temperature for soldering purposes(1/8" from case for 10 s) | $T_L$ | 260 | °C |

## Electrical Characteristics (at Ta=25 °C unless otherwise noted)

| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Static Characteristics** | | | | | | |
| Drain-source breakdown voltage | $V_{(BR)\ DSS}$ | $V_{GS}$ = 0V , $I_D$ = 250μA | 20 | | | V |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ = 20V , $V_{GS}$ = 0V | | | 1 | μA |
| Gate-body leakage current | $I_{GSS}$ | $V_{GS}$ = ±10V , $V_{DS}$ = 0V | | | ±20 | uA |
| Gate threshold voltage (note 2) | $V_{GS(th)}$ | $V_{DS}$ = $V_{GS}$ , $I_D$ = 250μA | 0.35 | | 1.1 | V |
| Drain-source on-resistance (note 2) | $R_{DS(on)}$ | $V_{GS}$ = 4.5V , $I_D$ = 0.65A | | | 380 | mΩ |
| | | $V_{GS}$ = 2.5V , $I_D$ = 0.55A | | | 450 | |
| | | $V_{GS}$ = 1.8V , $I_D$ = 0.45A | | | 800 | |
| Forward transconductance (note 2) | $g_{FS}$ | $V_{DS}$ = 10V , $I_D$ = 0.8A | | 1.6 | | S |
| Diode forward voltage | $V_{SD}$ | $I_S$ = 0.15A , $V_{GS}$ = 0V | | | 1.2 | V |
| **Dynamic Characteristics (note 4)** | | | | | | |
| Input capacitance | $C_{iss}$ | $V_{DS}$ = 16V , $V_{GS}$ = 0V , f = 1MHz | | 79 | 120 | pF |
| Output capacitance | $C_{oss}$ | | | 13 | 20 | |
| Reverse transfer capacitance | $C_{rss}$ | | | 9 | 15 | |
| **Switching Characteristics (note 4)** | | | | | | |
| Turn-on delay time (note 3) | $t_{d(on)}$ | $V_{GS}$ = 4.5V , $V_{DS}$ = 10V $I_D$ = 500mA , $R_{GEN}$ = 10Ω | | 6.7 | | nS |
| Turn-on rise time (note 3) | $t_r$ | | | 4.8 | | |
| Turn-off delay time (note 3) | $t_{d(off)}$ | | | 17.3 | | |
| Turn-off fall time (note 3) | $t_f$ | | | 7.4 | | |

**Notes:** 1. Surface mounted on FR4 board using the minimum recommended pad size.
2. Pulse test: Pulse width = 300μs, duty cycle ≤ 2%
3. Switching characteristics are independent of operating junction temperatures.
4. Graranted by design, not subject to producting.

## RATING AND CHARACTERISTIC CURVES (CMS3134KQA-HF)

Fig.1 - Output Characteristics

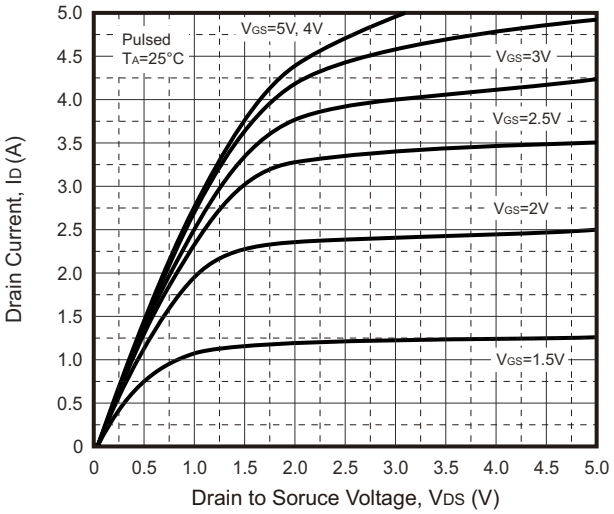



Fig.2 - Transfer Characteristics

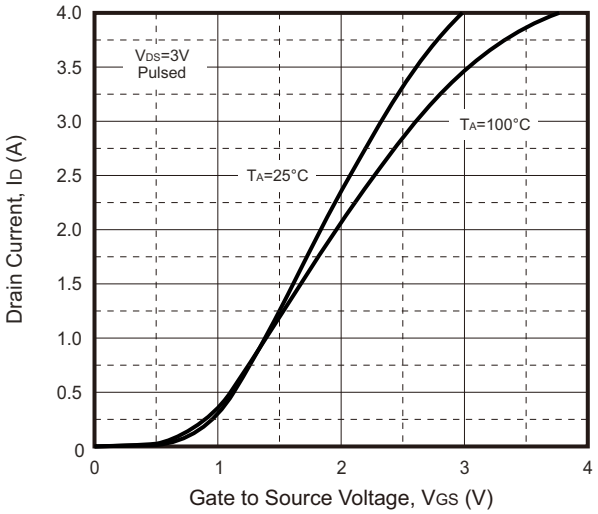



Fig.3 - $R_{DS(ON)}$ — $I_D$

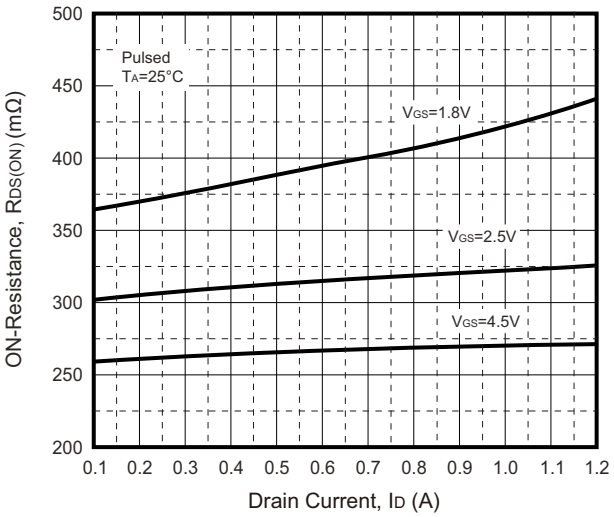



Fig.4 - $R_{DS(ON)}$ — $V_{GS}$

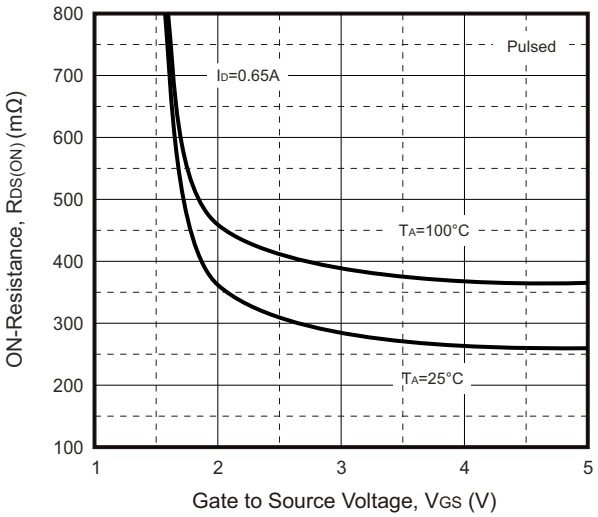



Fig.5 - $I_S$ — $V_{SD}$

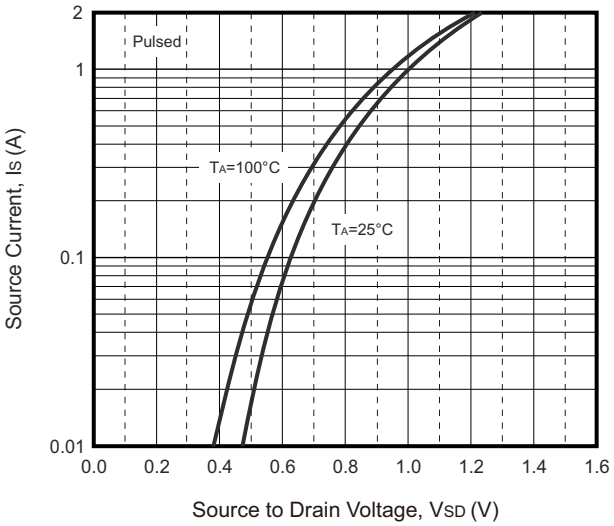
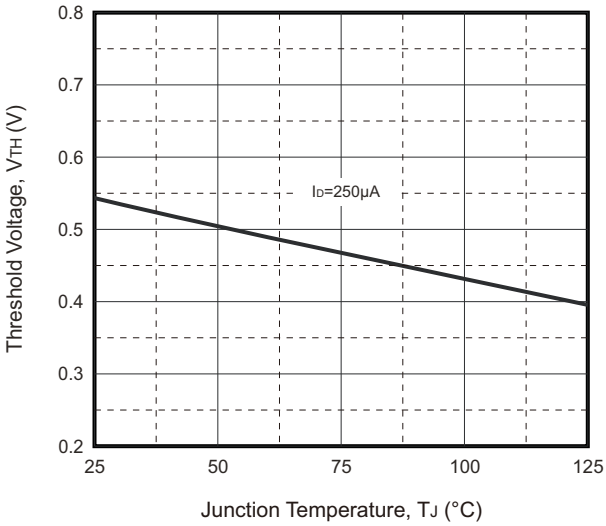
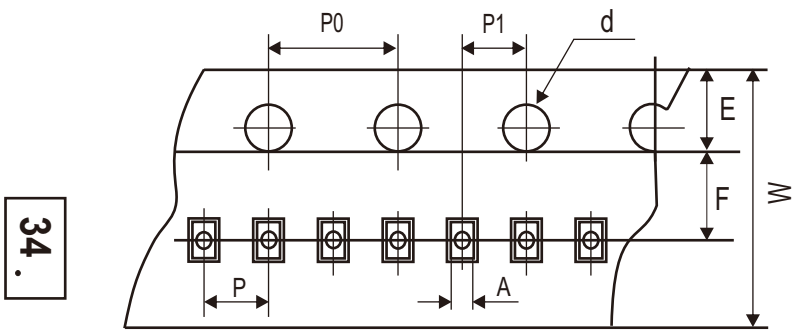


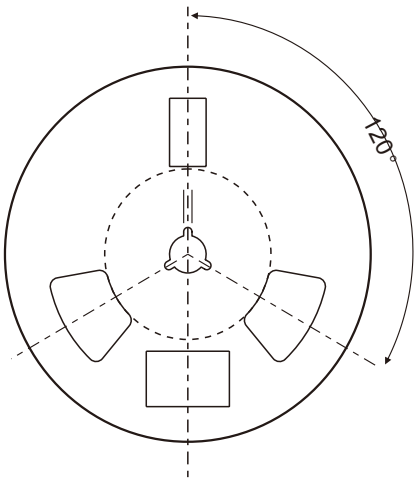

Fig.6 - Threshold Voltage

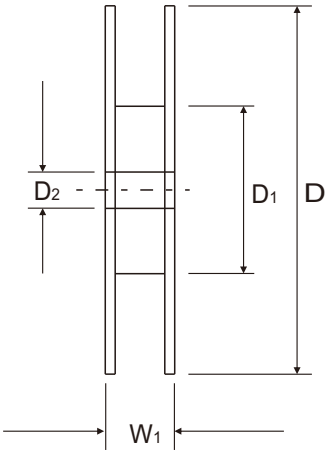


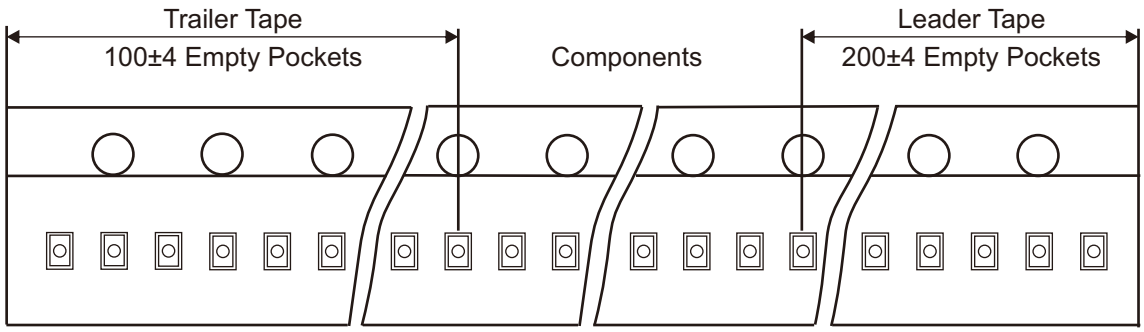

Company reserves the right to improve product design , functions and reliability without notice.

## Reel Taping Specification




| | SYMBOL | A | B | C | d | D | $D_1$ | $D_2$ |
|---|---|---|---|---|---|---|---|---|
| WBFBP-03E (1.0X0.6X0.5) | (mm) | 0.66 ± 0.05 | 1.15 ± 0.05 | 0.66 ± 0.05 | 1.50 + 0.10 | 178.00 ± 2.00 | 54.40 ± 1.00 | 13.00 ± 1.00 |
| | (inch) | 0.026 ± 0.002 | 0.045 ± 0.002 | 0.026 ± 0.002 | 0.059 + 0.004 | 7.008 ± 0.079 | 2.142 ± 0.039 | 0.512 ± 0.039 |

| | SYMBOL | E | F | P | $P_0$ | $P_1$ | W | $W_1$ |
|---|---|---|---|---|---|---|---|---|
| WBFBP-03E (1.0X0.6X0.5) | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 2.00 ± 0.05 | 4.00 ± 0.05 | 2.00 ± 0.05 | 8.00 + 0.30 - 0.10 | 12.30 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.079 ± 0.002 | 0.157 ± 0.002 | 0.079 ± 0.002 | 0.315 + 0.012 - 0.004 | 0.484 ± 0.039 |

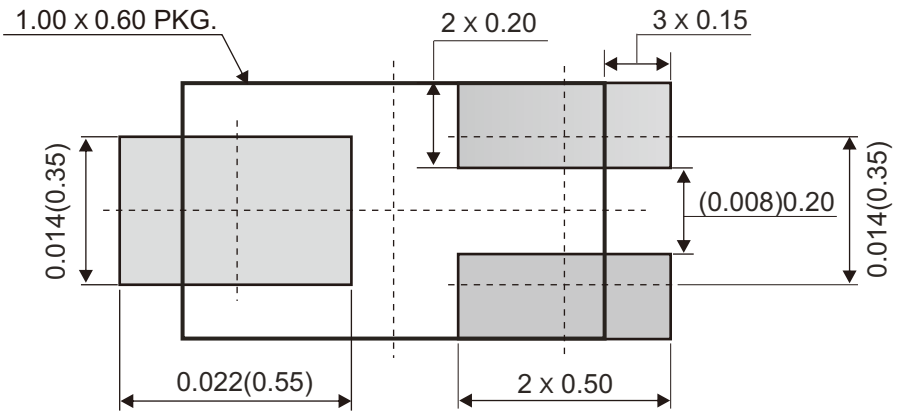
## Marking Code

| Part Number | Marking Code |
|---|---|
| CMS3134KQA-HF | 34 . |

34.

**34 = Device code**
**Solid dot = Pin 1 indicator**

## Suggested PAD Layout




## Standard Packaging

| Case Type | REEL PACK | |
|---|---|---|
| | REEL ( pcs ) | Reel Size (inch) |
| WBFBP-03E | 10,000 | 7 |