

N-CHANNEL MOS FIELD EFFECT TRANSISTOR
 FOR HIGH SPEED SWITCHING

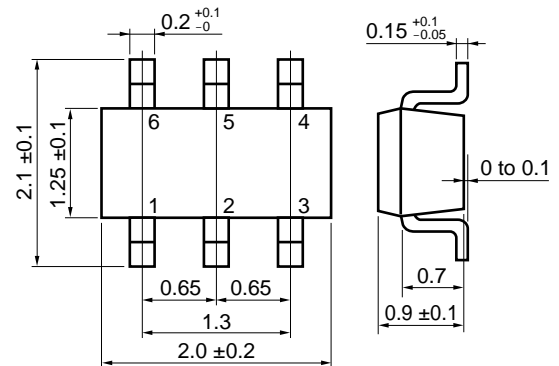
DESCRIPTION

The μ PA675T is an N-channel vertical MOS FET. Because it can be driven by a voltage as low as 1.5 V and it is not necessary to consider a drive current, this FET is ideal as an actuator for low-current portable systems such as headphone stereos and video cameras.

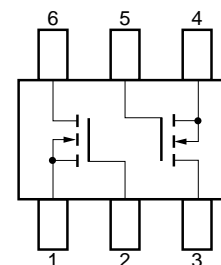
FEATURES

- Two MOS FET circuits in package the same size as SC-70
- Automatic mounting supported
- Gate can be driven by a 1.5 V power source
- Because of its high input impedance, there's no need to consider a drive current
- Since bias resistance can be omitted, the number of components required can be reduced

PACKAGE DRAWING (Unit: mm)



PIN CONNECTION



1. Source 1 (S1)
2. Gate 1 (G1)
3. Drain 2 (D2)
4. Source 2 (S2)
5. Gate 2 (G2)
6. Drain 1 (D1)

ORDERING INFORMATION

| PART NUMBER | PACKAGE |
|------------------------------|-------------|
| μ PA675T ^{Note} | SC-88 (SSP) |

Note Marking: SA

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

| | | | |
|---|-----------------------|-------------|----|
| Drain to Source Voltage (V _{GS} = 0 V) | V _{DSS} | 16 | V |
| Gate to Source Voltage (V _{DS} = 0 V) | V _{GSS} | ±7.0 | V |
| Drain Current (DC) (T _c = 25°C) | I _{D(DC)} | ±0.1 | A |
| Drain Current (pulse) ^{Note} | I _{D(pulse)} | ±0.2 | A |
| Total Power Dissipation (T _c = 25°C) | P _T | 0.2 | W |
| Channel Temperature | T _{ch} | 150 | °C |
| Storage Temperature | T _{stg} | -55 to +150 | °C |

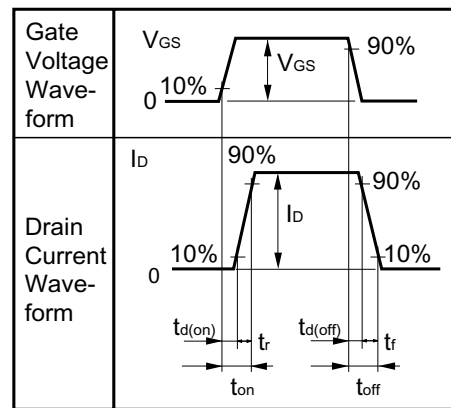
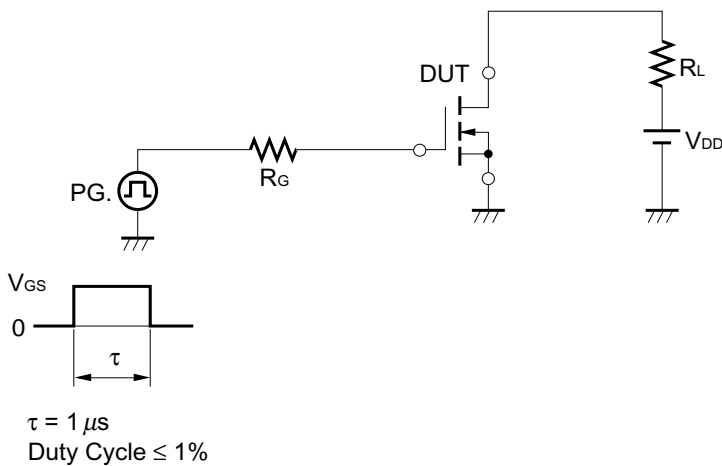
Note PW ≤ 10 ms, Duty Cycle ≤ 50%

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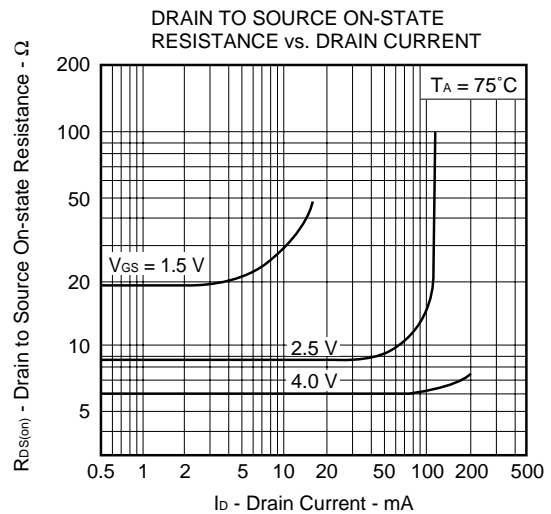
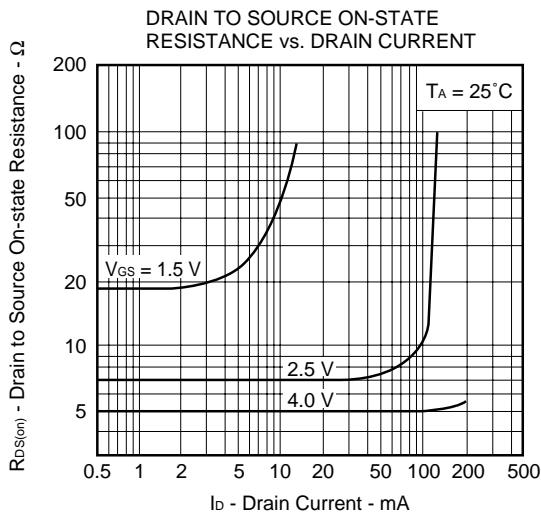
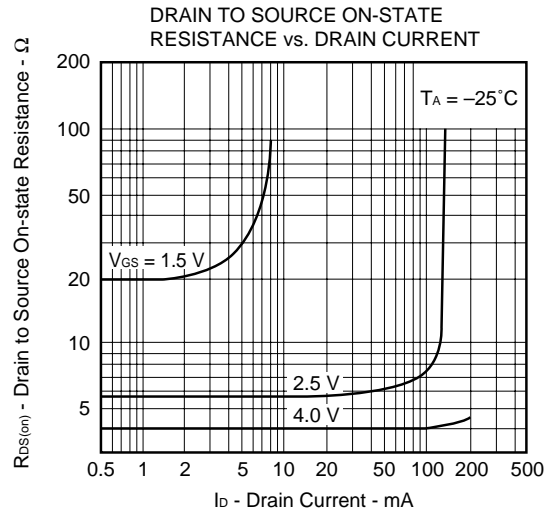
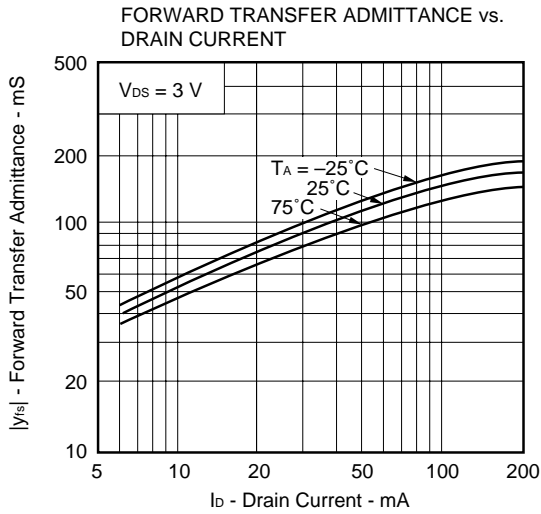
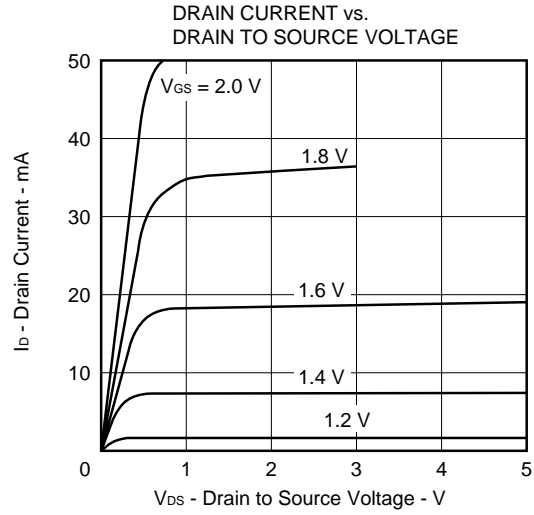
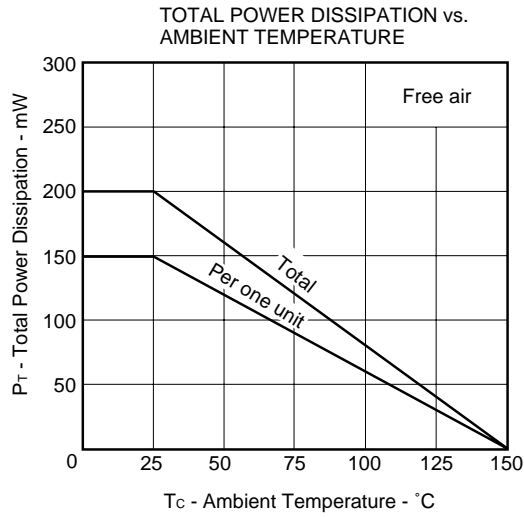
ELECTRICAL CHARACTERISTICS (TA = 25°C)

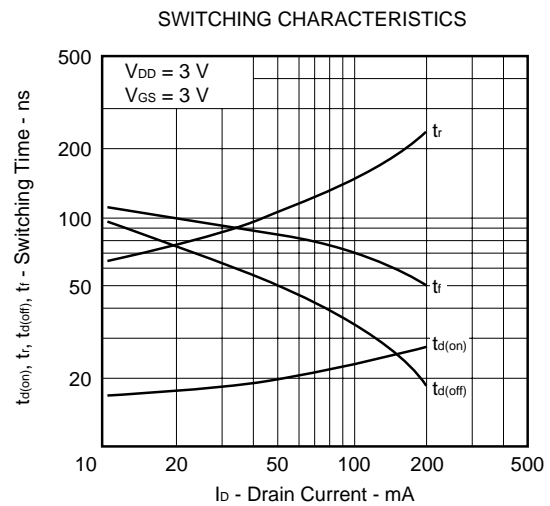
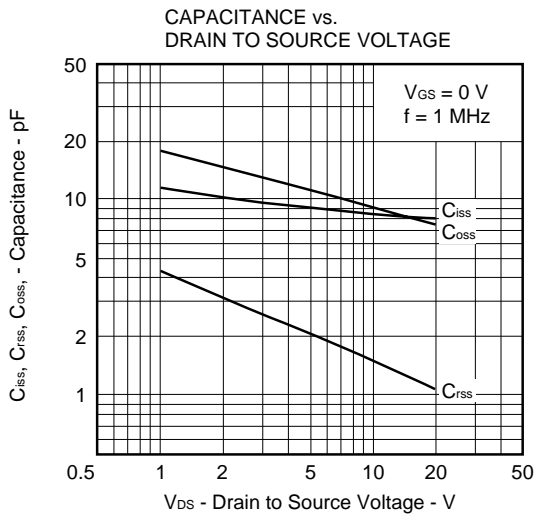
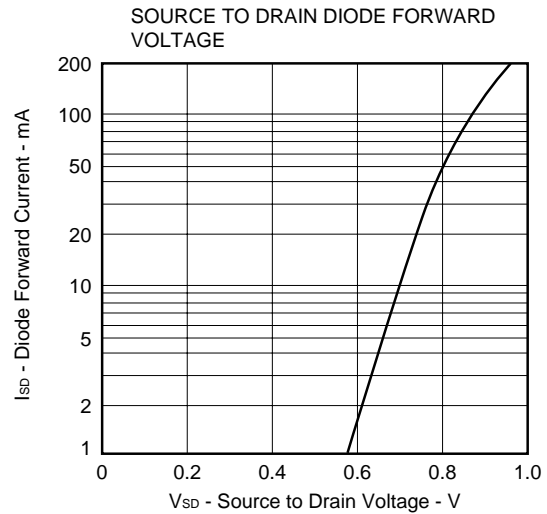
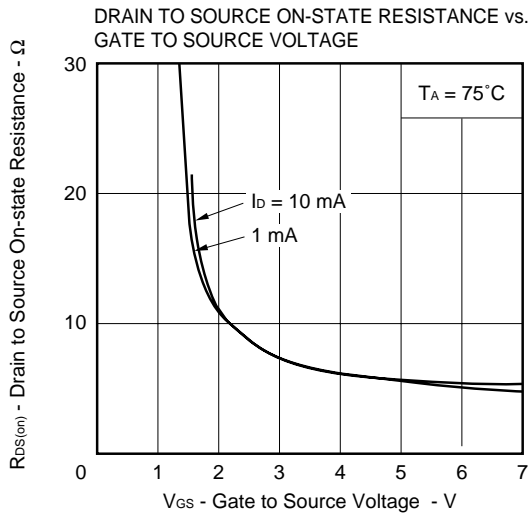
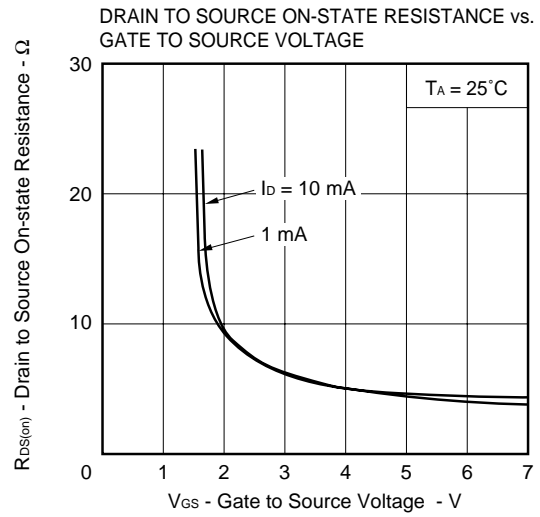
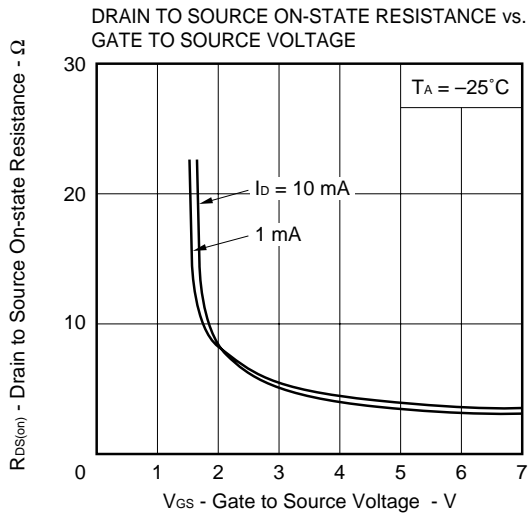
| CHARACTERISTICS | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|---------------|--|------|------|-----------|---------------|
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 16\text{ V}, V_{GS} = 0\text{ V}$ | | | 1.0 | μA |
| Gate Leakage Current | I_{GSS} | $V_{GS} = \pm 7.0\text{ V}, V_{DS} = 0\text{ V}$ | | | ± 3.0 | μA |
| Gate Cut-off Voltage | $V_{GS(off)}$ | $V_{DS} = 3\text{ V}, I_D = 10\ \mu\text{A}$ | 0.5 | 0.8 | 1.1 | V |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS} = 3\text{ V}, I_D = 10\text{ mA}$ | 20 | | | mS |
| Drain to Source On-state Resistance | $R_{DS(on)1}$ | $V_{GS} = 1.5\text{ V}, I_D = 1\text{ mA}$ | | 20 | 50 | Ω |
| | $R_{DS(on)2}$ | $V_{GS} = 2.5\text{ V}, I_D = 10\text{ mA}$ | | 7 | 15 | Ω |
| | $R_{DS(on)3}$ | $V_{GS} = 4.0\text{ V}, I_D = 10\text{ mA}$ | | 5 | 12 | Ω |
| Input Capacitance | C_{iss} | $V_{DS} = 3\text{ V}$ | | 10 | | pF |
| Output Capacitance | C_{oss} | $V_{GS} = 0\text{ V}$ | | 13 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $f = 1\text{ MHz}$ | | 3 | | pF |
| Turn-on Delay Time | $t_{d(on)}$ | $V_{DD} = 3\text{ V}, I_D = 10\text{ mA}$ | | 15 | | ns |
| Rise Time | t_r | $V_{GS} = 3\text{ V}$ | | 70 | | ns |
| Turn-off Delay Time | $t_{d(off)}$ | $R_G = 10\ \Omega$ | | 100 | | ns |
| Fall Time | t_f | | | 110 | | ns |

SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS



TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)





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