

MOS FIELD EFFECT TRANSISTOR
 μ PA572T

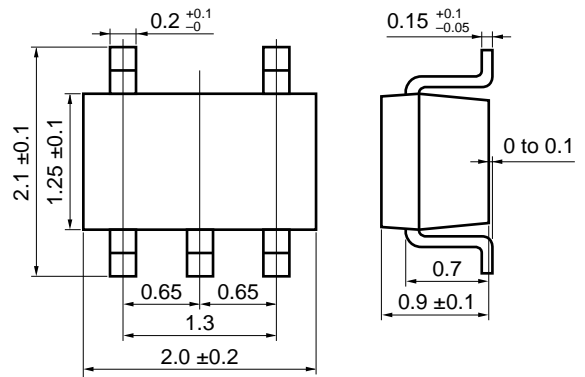
N-CHANNEL MOS FET (5-PIN 2 CIRCUITS)
FOR SWITCHING

The μ PA572T is a super-mini-mold device provided with two MOS FET circuits. It achieves high-density mounting and saves mounting costs.

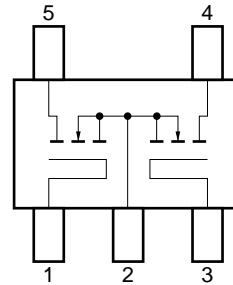
FEATURES

- Two source common MOS FET circuits in package the same size as SC-70
- Directly driven by 3 V power supply
- Automatic mounting supported

PACKAGE DIMENSIONS (in millimeters)



EQUIVALENT CIRCUIT



PIN CONNECTION

1. Gate 1 (G1)
 2. Source (common)
 3. Gate 2 (G2)
 4. Drain 2 (D2)
 5. Drain 1 (D1)
- Marking: DB

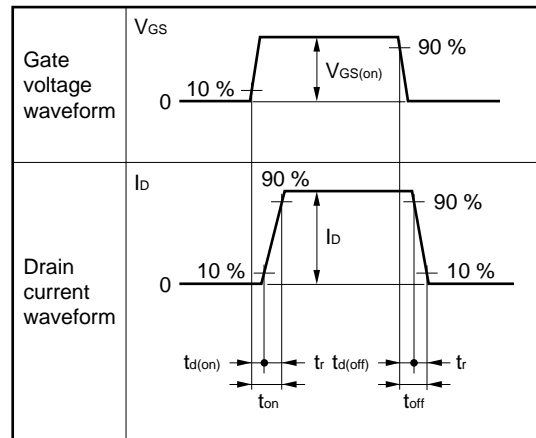
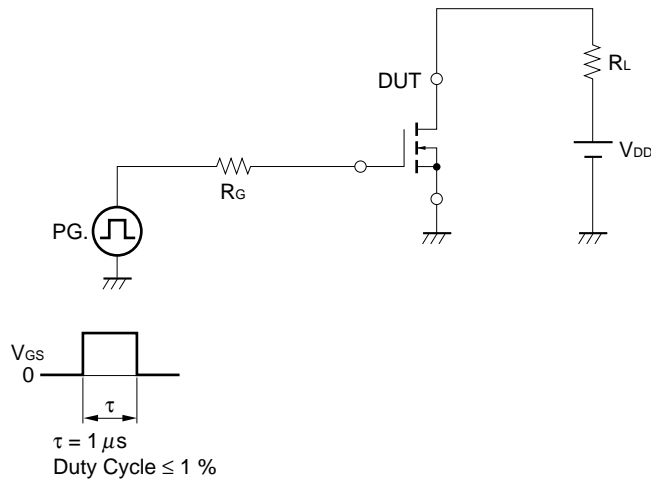
ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

| PARAMETER | SYMBOL | TEST CONDITIONS | RATINGS | UNIT |
|-------------------------|-----------------------|-------------------------------|-------------|------|
| Drain to Source Voltage | V _{DSS} | V _{GS} = 0 | 30 | V |
| Gate to Source Voltage | V _{GSS} | V _{DS} = 0 | ±7 | V |
| Drain Current (DC) | I _{D(DC)} | | ±100 | mA |
| Drain Current (pulse) | I _{D(pulse)} | PW ≤ 10 ms, Duty Cycle ≤ 50 % | ±200 | mA |
| Total Power Dissipation | P _T | | 200 (Total) | mW |
| Channel Temperature | T _{ch} | | 150 | °C |
| Operating Temperature | T _{opt} | | -55 to +80 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

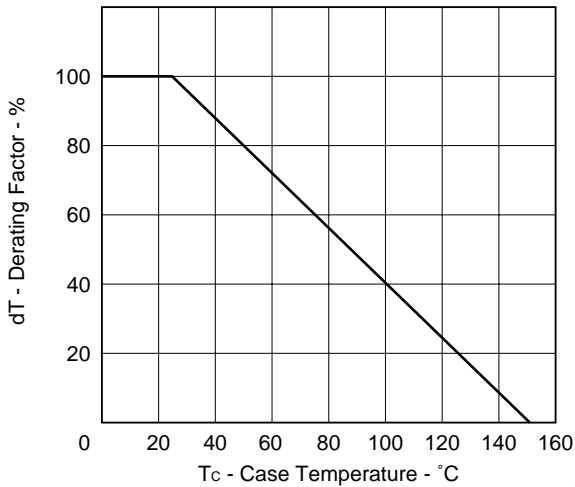
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN. | TYP. | MAX. | UNIT |
|-------------------------------------|----------------------|--|------|------|------|------|
| Drain Cut-off Current | I _{DSS} | V _{DS} = 30 V, V _{GS} = 0 | | | 1.0 | μA |
| Gate Leakage Current | I _{GSS} | V _{GS} = ±5 V, V _{DS} = 0 | | | ±3.0 | μA |
| Gate Cut-off Voltage | V _{GS(off)} | V _{DS} = 3 V, I _D = 10 μA | 0.8 | 1.0 | 1.5 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} = 3 V, I _D = 10 mA | 20 | 50 | | mS |
| Drain to Source On-State Resistance | R _{DS(on)1} | V _{GS} = 2.5 V, I _D = 1 mA | | 7 | 13 | Ω |
| Drain to Source On-State Resistance | R _{DS(on)2} | V _{GS} = 4.0 V, I _D = 10 mA | | 5 | 8 | Ω |
| Input Capacitance | C _{iss} | V _{DS} = 5.0 V, V _{GS} = 0, f = 1 MHz | | 16 | | pF |
| Output Capacitance | C _{oss} | | | 14 | | pF |
| Reverse Transfer Capacitance | C _{rss} | | | 2 | | pF |
| Turn-On Delay Time | t _{d(on)} | V _{DD} = 5 V, I _D = 10 mA, V _{GS(on)} = 5 V, R _G = 10 Ω, R _L = 500 Ω | | 15 | | ns |
| Rise Time | t _r | | | 20 | | ns |
| Turn-Off Delay Time | t _{d(off)} | | | 100 | | ns |
| Fall Time | t _f | | | 100 | | ns |

SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS (RESISTANCE LOADED)

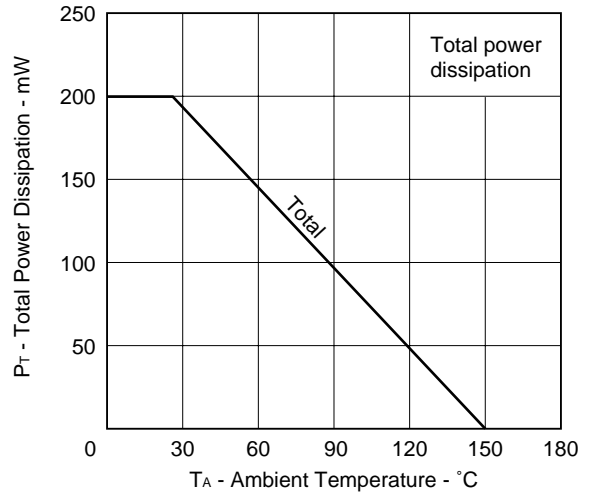


TYPICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$)

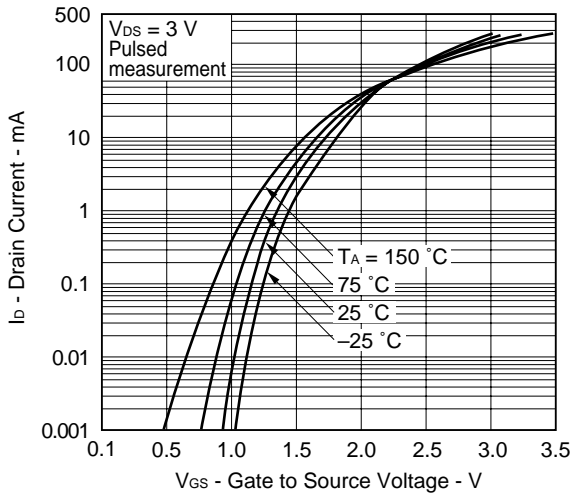
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



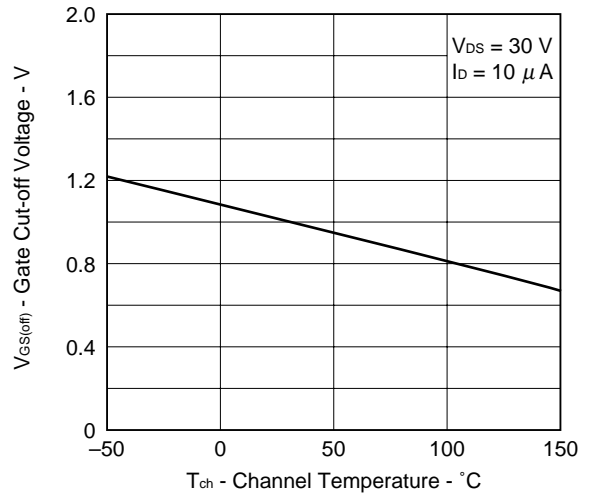
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



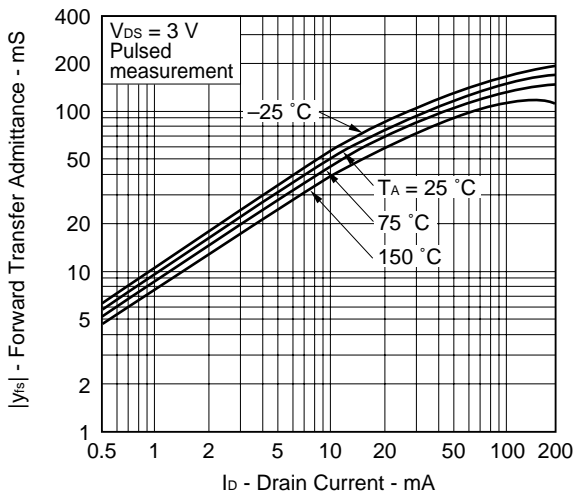
TRANSFER CHARACTERISTICS



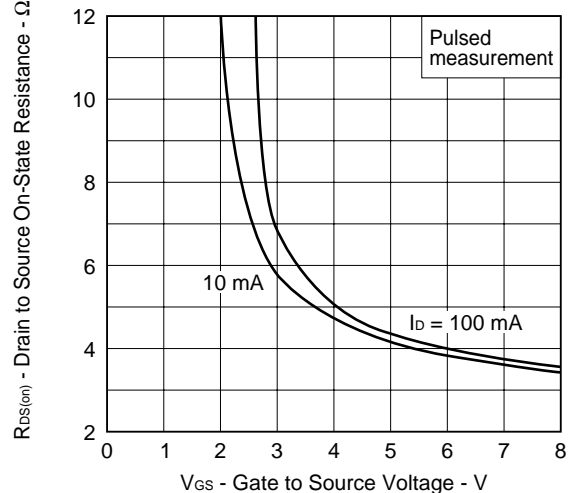
GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



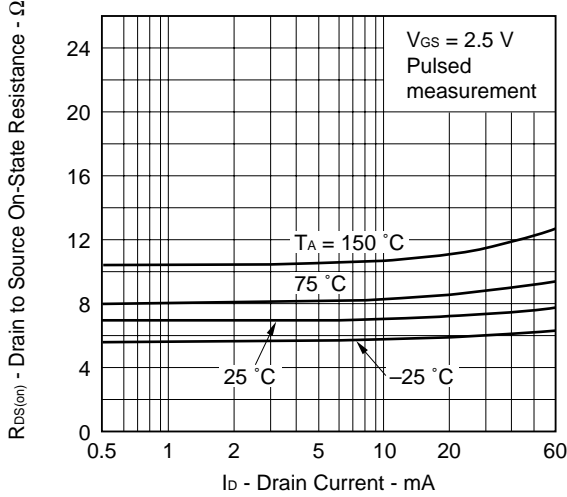
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT



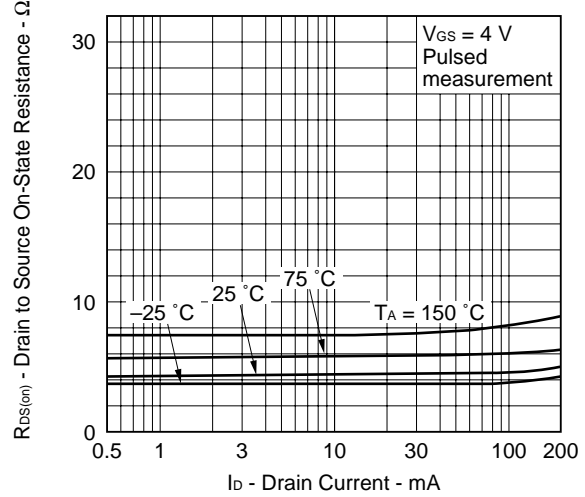
DRAIN TO SOURCE ON-STATE RESISTANCE vs. GATE TO SOURCE VOLTAGE



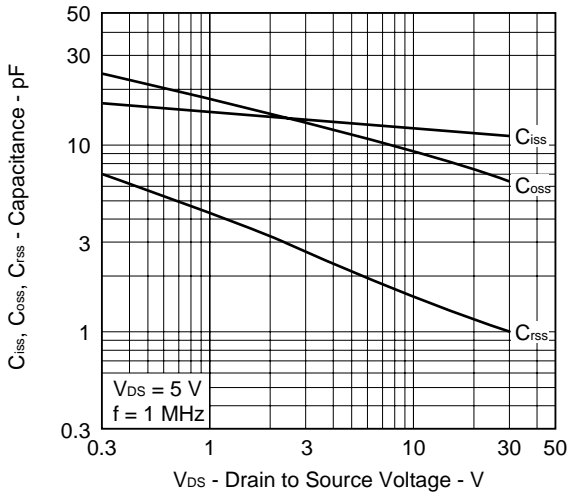
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



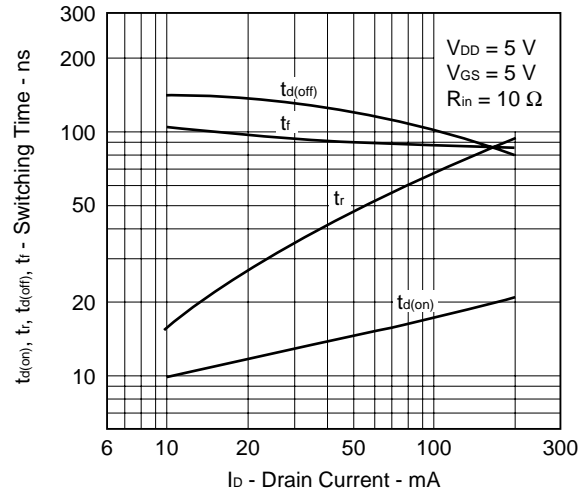
DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



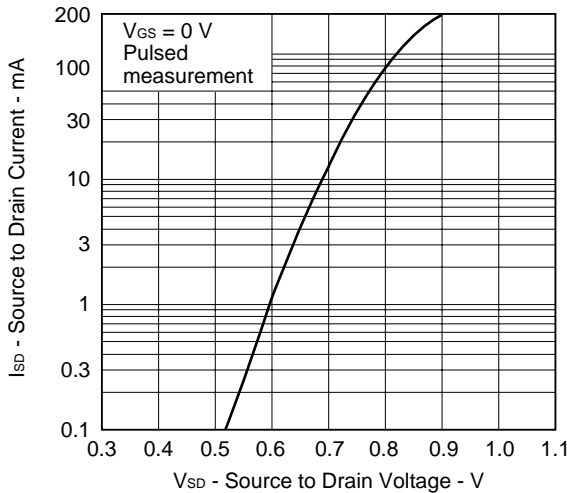
CAPACITANCE vs. DRAIN TO SOURCE VOLTAGE



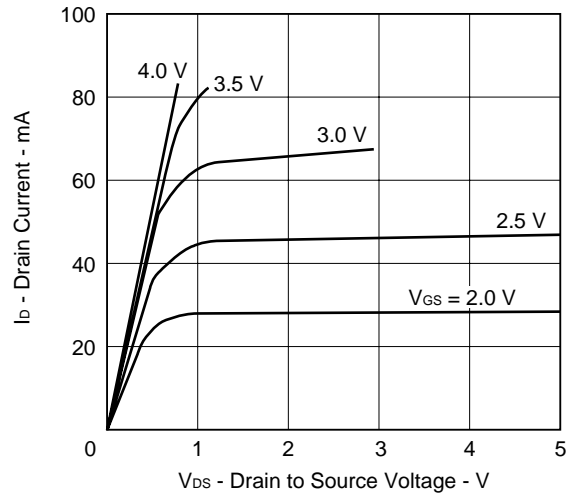
SWITCHING CHARACTERISTICS



SOURCE TO DRAIN DIODE FORWARD VOLTAGE



DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



REFERENCE

| Document Name | Document No. |
|---|--------------|
| NEC semiconductor device reliability/quality control system | TEI-1202 |
| Quality grade on NEC semiconductor devices | IEI-1209 |
| Semiconductor device mounting technology manual | C10535E |
| Guide to quality assurance for semiconductor devices | MEI-1202 |
| Semiconductor selection guide | X10679E |

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Anti-radioactive design is not implemented in this product.