



UTM4953

Power MOSFET

DUAL P-CHANNEL ENHANCEMENT MODE

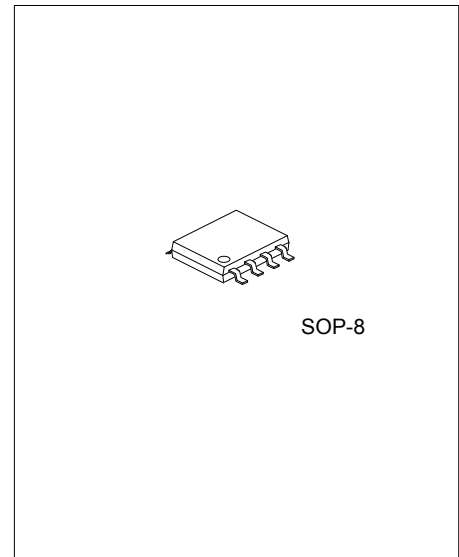
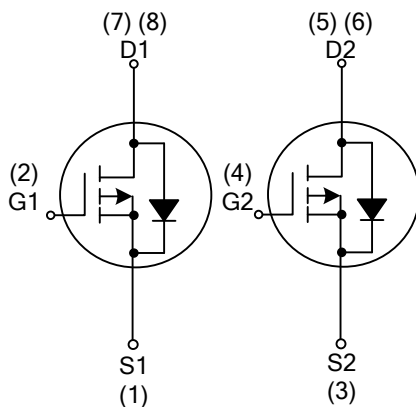
DESCRIPTION

The **UTM4953** uses advanced UTC technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(ON)} < 60m\Omega @ V_{GS} = -10V$
- * $R_{DS(ON)} < 95m\Omega @ V_{GS} = -4.5V$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL

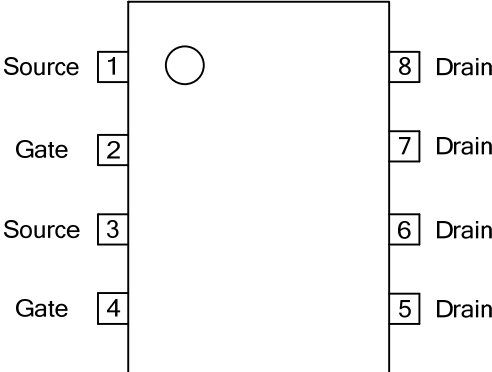


ORDERING INFORMATION

| Ordering Number | | Package | Packing |
|-----------------|----------------|---------|-----------|
| Lead Free | Halogen Free | | |
| UTM4953L-S08-R | UTM4953G-S08-R | SOP-8 | Tape Reel |

| | |
|--|--|
| <p>UTM4953L-S08-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Lead Plating | <ul style="list-style-type: none"> (1) R: Tape Reel, T: Tube (2) S08: SOP-8 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn |
|--|--|

■ PIN CONFIGURATION



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|----------------------|------------|------------|--------------------|
| Drain-Source Voltage | V_{DSS} | -30 | V |
| Gate-Source Voltage | V_{GSS} | ± 25 | V |
| Drain Current | Continuous | I_D | -4.9 |
| | Pulsed | I_{DM} | -30 |
| Power Dissipation | P_D | 2.5 | W |
| Junction Temperature | T_J | +150 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~ +150 | $^{\circ}\text{C}$ |

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

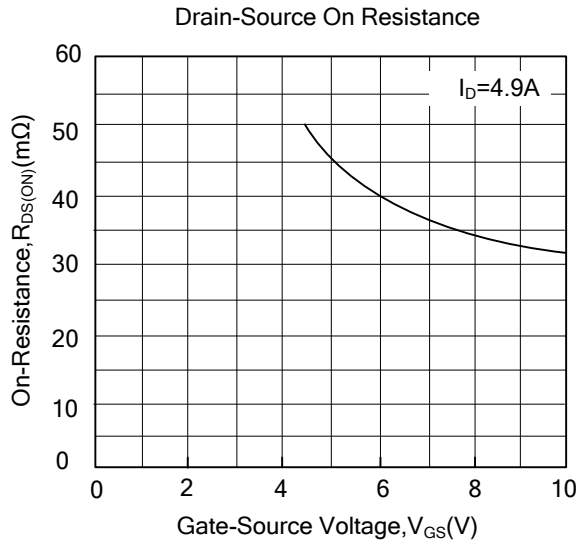
| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------------|---------|-----------------------------|
| Junction to Ambient | θ_{JA} | 50 | $^{\circ}\text{C}/\text{W}$ |

■ ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|--------------|---|-----|------|-----------|---------------|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0\text{V}, I_D=-250\mu\text{A}$ | -30 | | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=-24\text{V}, V_{GS}=0\text{V}$ | | | -1 | μA |
| Gate-Body Leakage Current | I_{GSS} | $V_{DS}=0\text{V}, V_{GS}=\pm 25\text{V}$ | | | ± 100 | nA |
| ON CHARACTERISTICS | | | | | | |
| Gate Threshold Voltage | $V_{GS(TH)}$ | $V_{DS}=V_{GS}, I_D=-250\mu\text{A}$ | -1 | -1.5 | -2 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=-10\text{V}, I_D=-4.9\text{A}$ | | 53 | 60 | m Ω |
| | | $V_{GS}=-4.5\text{V}, I_D=-3.6\text{A}$ | | 80 | 95 | |
| DYNAMIC PARAMETERS | | | | | | |
| Input Capacitance | C_{ISS} | $V_{DS}=-25\text{V}, V_{GS}=0\text{V}, f=1.0\text{MHz}$ | | 1260 | | pF |
| Output Capacitance | C_{OSS} | | | 340 | | pF |
| Reverse Transfer Capacitance | C_{RSS} | | | 220 | | pF |
| SWITCHING PARAMETERS (Note) | | | | | | |
| Turn-ON Delay Time | $t_{D(ON)}$ | $V_{GEN}=-10\text{V}, V_{DD}=-15\text{V}, R_L=7.5\Omega, R_G=6\Omega, I_D=-2\text{A}$ | | 10 | 18 | ns |
| Turn-ON Rise Time | t_R | | | 15 | 20 | ns |
| Turn-OFF Delay Time | $t_{D(OFF)}$ | | | 22 | 38 | ns |
| Turn-OFF Fall-Time | t_F | | | 15 | 25 | ns |
| Total Gate Charge | Q_G | $V_{DS}=-15\text{V}, V_{GS}=-10\text{V}, I_D=-4.6\text{A}$ | | 22.3 | 29 | nC |
| Gate Source Charge | Q_{GS} | | | 4.65 | | nC |
| Gate Drain Charge | Q_{GD} | | | 2 | | nC |
| SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS | | | | | | |
| Diode Forward Voltage | V_{SD} | $I_{SD}=-1.7\text{A}, V_{GS}=0\text{V}$ | | -0.7 | -1.3 | V |

Note: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$

■ TYPICAL CHARACTERISTICS



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