



SINGLE P-CHANNEL POWER MOSFET

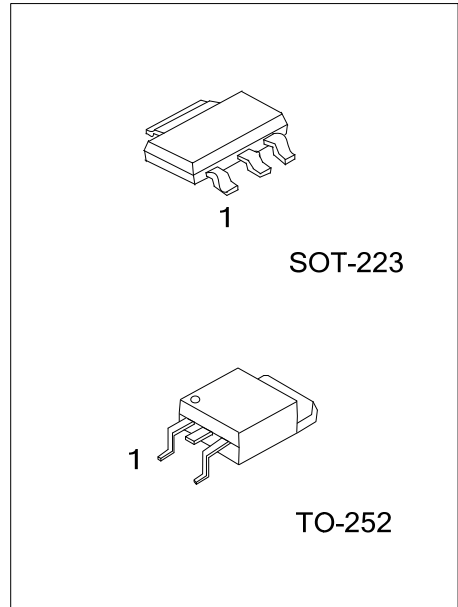
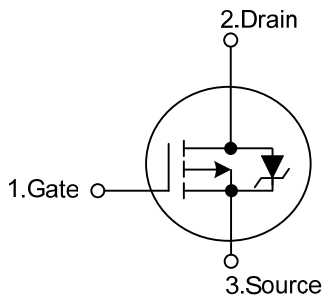
■ **DESCRIPTION**

The **UT2955** uses advanced trench 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, in PWM applications, converters and power supplies.

■ **FEATURES**

- * $R_{DS(ON)} < 170m\Omega @ V_{GS}=-10V, I_D=-0.75A$
- * $R_{DS(ON)} < 180m\Omega @ V_{GS}=-10V, I_D=-1.5A$
- * $R_{DS(ON)} < 185m\Omega @ V_{GS}=-10V, I_D=-2.4A$
- * Low Capacitance
- * Low Gate Charge
- * Fast Switching Capability
- * Avalanche Energy Specified

■ **SYMBOL**



■ **ORDERING INFORMATION**

| Ordering Number | | Package | Pin Assignment | | | Packing |
|-----------------|---------------|---------|----------------|---|---|-----------|
| Lead Free | Halogen Free | | 1 | 2 | 3 | |
| - | UT2955G-AA3-R | SOT-223 | G | D | S | Tape Reel |
| UT2955L-TN3-R | UT2955G-TN3-R | TO-252 | G | D | S | Tape Reel |

Note: Pin Assignment: G: Gate D: Drain S: Source

| | |
|----------------------|---|
| <p>UT2955G-AA3-R</p> | <p>(1) R: Tape Reel (2) AA3: SOT-223, TN3: TO-252 (3) G: Halogen Free and Lead Free</p> |
|----------------------|---|

■ **MARKING**

| SOT-223 | TO-252 |
|---------|--------|
| | |

■ ABSOLUTE MAXIMUM RATINGS (T_a=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|------------------|------------|------|
| Drain-Source Voltage | V _{DSS} | -60 | V |
| Gate-Source Voltage | V _{GSS} | ±20 | V |
| Continuous Drain Current | I _D | -1.7 | A |
| Pulsed Drain Current | I _{DM} | -10.4 | A |
| Single Pulsed Avalanche Energy (Note 3) | E _{AS} | 225 | mJ |
| Power Dissipation | SOT-223 | 1.0 | W |
| | TO-252 | 1.13 | W |
| Junction Temperature | T _J | +175 | °C |
| Storage Temperature | T _{STG} | -55 ~ +175 | °C |

Note: 1. 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.

2. Pulse width limited by T_{J(MAX)}

3. V_{DD}=15V, V_G=10V, I_{PK}=6.7A, L=10mH, R_G=25Ω

■ THERMAL DATA

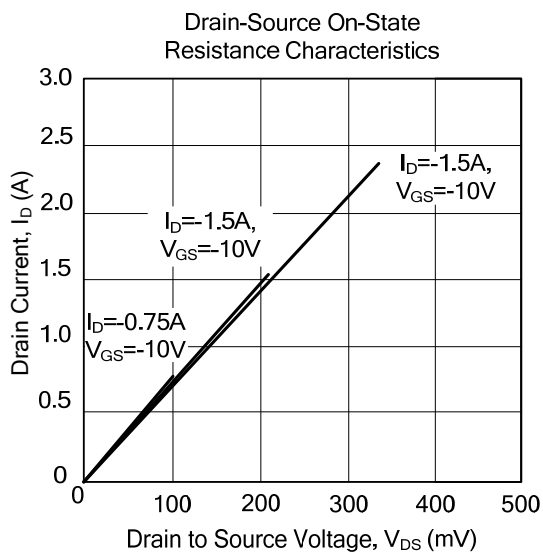
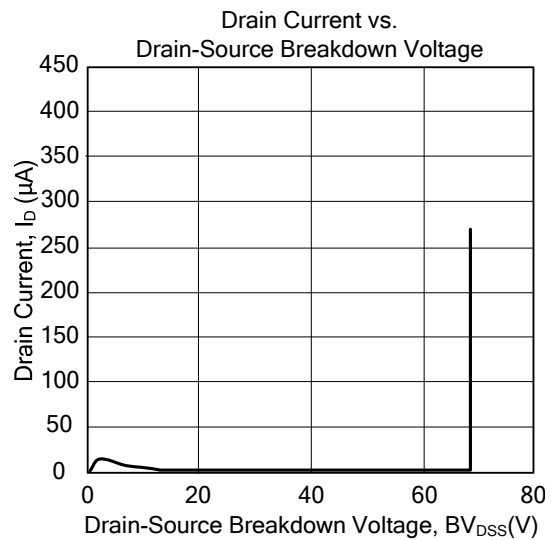
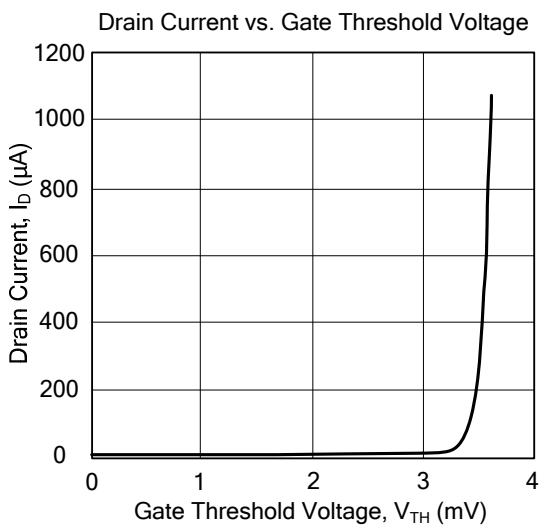
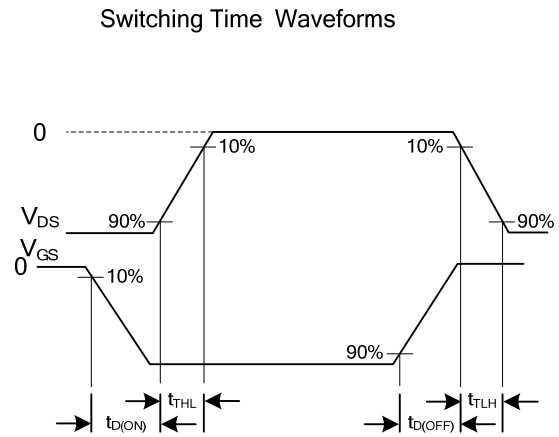
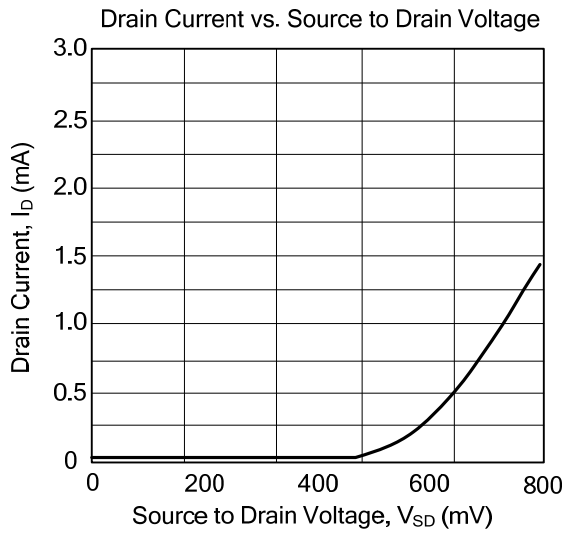
| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|---------|---------|------|
| Junction to Ambient | SOT-223 | 150 | °C/W |
| | TO-252 | 110 | °C/W |
| Junction to Case | SOT-223 | 14 | °C/W |
| | TO-252 | 4.53 | °C/W |

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|--|---------------------|--|---|-------|-------|------|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | V _{GS} =0V, I _D =-250μA | -60 | | | V |
| Drain-Source Leakage Current | I _{DSS} | V _{DS} =-60V, V _{GS} =0V | | | -1.0 | μA |
| Gate-Source Leakage Current | I _{GSS} | V _{DS} =0V, V _{GS} =±20V | | | ±100 | nA |
| ON CHARACTERISTICS (Note) | | | | | | |
| Gate Threshold Voltage | V _{GS(TH)} | V _{DS} =V _{GS} , I _D =-1.0mA | -2.0 | | -4.0 | V |
| Static Drain-Source On-Resistance | R _{DS(ON)} | V _{GS} =-10V, I _D =-0.75A | | 145 | 170 | mΩ |
| | | V _{GS} =-10V, I _D =-1.5A | | 150 | 180 | mΩ |
| | | V _{GS} =-10V, I _D =-2.4A | | 154 | 185 | mΩ |
| DYNAMIC PARAMETERS | | | | | | |
| Input Capacitance | C _{ISS} | V _{DS} =-25V, V _{GS} =0V, f=1MHz | | 492 | | pF |
| Output Capacitance | C _{OSS} | | | 165 | | pF |
| Reverse Transfer Capacitance | C _{RSS} | | | 50 | | pF |
| SWITCHING PARAMETERS | | | | | | |
| Total Gate Charge | Total | V _{DS} =30V, V _{GS} =10V, I _D =1.5A | | 14.3 | | nC |
| | Threshold | | Q _G | | 1.2 | |
| Gate Source Charge | Q _{GS} | | | 2.3 | | nC |
| Gate Drain Charge | Q _{GD} | | | 5.2 | | nC |
| Turn-ON Delay Time | t _{D(ON)} | | | 11 | | ns |
| Turn-ON Rise Time | t _R | | V _{GS} =10V, V _{DD} =25V, I _D =1.5A, | | 7.6 | |
| Turn-OFF Delay Time | t _{D(OFF)} | R _G =9.1Ω, R _L =25Ω | | 65 | | ns |
| Turn-OFF Fall-Time | t _F | | | 38 | | ns |
| SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS | | | | | | |
| Diode Forward Voltage | V _{SD} | I _S =1.5A, V _{GS} =0V | | -1.10 | -1.30 | V |
| Body Diode Reverse Recovery Time | t _{RR} | V _{GS} =0V, dI _S /dI _t =100A/μs | | 36 | | ns |
| Body Diode Reverse Recovery Charge | Q _{RR} | I _S =1.5A | | 0.139 | | nC |

Note: Pulse Test: pulse width ≤ 300 s, duty cycle ≤ 2%.

TYPICAL CHARACTERISTICS



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