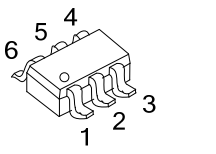
# P-CHANNEL 2.5-V (G-S) MOSFET




SOT-26

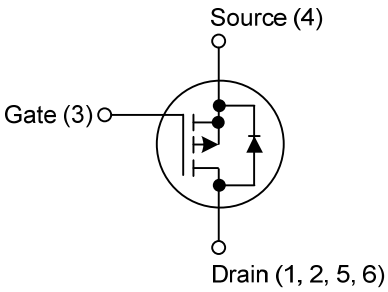
## ■ DESCRIPTION

The UTC **UT3443** is a P-channel power MOSFET using UTC's advanced trench technology to provide customers with a minimum on-state resistance and extremal low gate charge with a 12V gate rating.

## ■ FEATURES

* $V_{DS(V)}$= -20V
* $I_D$=-4.5A
*$R_{DS(ON)}$ < 100mΩ @$V_{GS}$ = -2.5V,
$R_{DS(ON)}$ < 65mΩ @$V_{GS}$ = -4.5V

## ■ SYMBOL



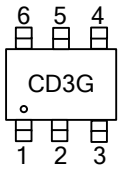

## ■ ORDERING INFORMATION

| Ordering Number | Package | Pin Assignment | | | | | | Packing |
|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | |
| UT3443G-AG6-R | SOT-26 | D | D | G | S | D | D | Tape Reel |

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

| | |
|---|---|
| UT3443G-AG6-R<br>(1)Packing Type<br>(2)Package Type<br>(3)Green Package | (1) R: Tape Reel<br>(2) AG6: SOT-26<br>(3) G: Halogen Free and Lead Free |

## ■ MARKING



## ■ ABSOLUTE MAXIMUM RATINGS ($T_A$=25°C, unless otherwise specified)

| PARAMETER | | | SYMBOL | RATINGS | UNIT |
|---|---|---|---|---|---|
| Drain-Source Voltage | | | $V_{DSS}$ | -20 | V |
| Gate-Source Voltage | | | $V_{GSS}$ | ±12 | V |
| Drain Current | Continuous $T_J$ =150°C (Note 2) | $T_A$=25°C | $I_D$ | -4.5 | A |
| | | $T_A$=70°C | | -3.6 | A |
| | Pulsed | | $I_{DM}$ | -20 | A |
| Power Dissipation (Note 2) | | $T_A$=25°C | $P_D$ | 1.1 | W |
| Junction Temperature | | | $T_J$ | +150 | °C |
| Storage Temperature | | | $T_{STG}$ | -55~+150 | °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 CHARACTERISTICS

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---|---|---|---|
| Junction to Ambient | $\theta_{JA}$ | 110 | °C/W |

Note: Surface Mounted on FR4 Board, t≤5 sec

## ■ ELECTRICAL CHARACTERISTICS ($T_J$=25°C, unless otherwise noted)

| PARAMETER | | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | | | |
| Drain-Source Leakage Current | | $I_{DSS}$ | $V_{DS}$=-20V, $V_{GS}$=0V | | | -1 | μA |
| | | | $V_{DS}$=-20V, $V_{GS}$=0V, $T_C$=70°C | | | -5 | |
| Gate- Source Leakage Current | Forward | $I_{GSS}$ | $V_{GS}$=+12V, $V_{DS}$=0V | | | +100 | nA |
| | Reverse | | $V_{GS}$=-12V, $V_{DS}$=0V | | | -100 | nA |
| **ON CHARACTERISTICS** | | | | | | | |
| Gate Threshold Voltage | | $V_{GS(TH)}$ | $V_{DS}$=$V_{GS}$, $I_D$=-250μA | -0.6 | | -1.4 | V |
| Static Drain-Source On-State Resistance (Note 1) | | $R_{DS(ON)}$ | $V_{GS}$=-4.5V, $I_D$=-4.5A | | 0.050 | 0.065 | Ω |
| | | | $V_{GS}$=-2.7V, $I_D$=-3.8A | | 0.070 | 0.090 | Ω |
| | | | $V_{GS}$=-2.5V, $I_D$=-3.7A | | 0.080 | 0.100 | Ω |
| **SWITCHING PARAMETERS** (Note 2) | | | | | | | |
| Total Gate Charge | | $Q_G$ | $V_{GS}$=-4.5V, $V_{DS}$=-10V, $I_D$=-4.5A | | 7.3 | 15 | nC |
| Gate to Source Charge | | $Q_{GS}$ | | | 2.0 | | nC |
| Gate to Drain Charge | | $Q_{GD}$ | | | 1.9 | | nC |
| Gate Resistance | | $R_g$ | | 3 | | 15 | Ω |
| Turn-ON Delay Time | | $t_{D(ON)}$ | $V_{DD}$=-10V, $I_D$≈-1.0A, $V_{GEN}$=-4.5V, $R_L$=10Ω, $R_G$=6Ω | | 15 | 50 | ns |
| Rise Time | | $t_R$ | | | 32 | 60 | ns |
| Turn-OFF Delay Time | | $t_{D(OFF)}$ | | | 50 | 100 | ns |
| Fall-Time | | $t_F$ | | | 45 | 80 | ns |
| **SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS** | | | | | | | |
| Drain-Source Diode Forward Voltage (Note 1) | | $V_{SD}$ | $I_S$=-1.7A, $V_{GS}$=0V | | -0.8 | -1.2 | V |
| Body Diode Reverse Recovery Time | | $t_{RR}$ | $I_F$=-1.7A, di/dt=100A/μs | | 35 | 80 | ns |

Notes: 1. Pulse test; pulse width ≤300μs, duty cycle ≤2%.
2. Guaranteed by design, not subject to production testing.