



UT3443

Preliminary

Power MOSFET

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

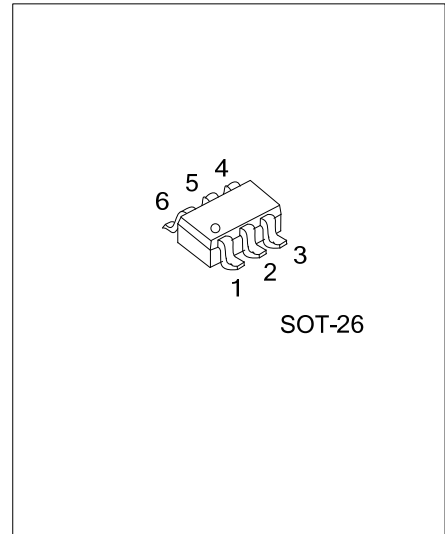
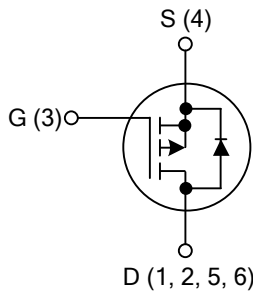
DESCRIPTION

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

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

SYMBOL



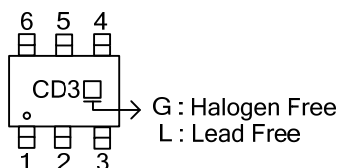
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1, 2, 5, 6	3	4	
UT3443L-AG6-R	UT3443G-AG6-R	SOT-26	D	G	S	Tape Reel

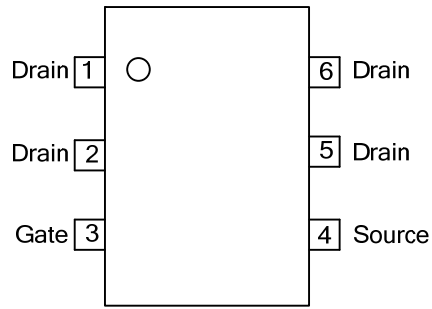
Note: Pin Assignment: G: Gate D: Drain S: Source

<p>UT3443L-AG6-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Lead Free 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AG6: SOT-26 (3) G: Halogen Free, L: Lead Free
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MARKING



■ PIN CONFIGURATION



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

PARAMETER		SYMBOL	RATINGS	UNIT	
Drain-Source Voltage		V_{DSS}	-20	V	
Gate-Source Voltage		V_{GSS}	± 12	V	
Drain Current	Continuous $T_J=150^\circ\text{C}$ (Note 2)	$T_A=25^\circ\text{C}$	-4.5	A	
		$T_A=70^\circ\text{C}$	-3.6		
	Pulsed	I_{DM}	-20		
Power Dissipation (Note 2)		$T_A=25^\circ\text{C}$	P_D	1.1	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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 1)	θ_{JA}	110	$^\circ\text{C}/\text{W}$

Note: 1. Surface Mounted on FR4 Board, $t \leq 5$ sec

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-20\text{V}, V_{GS}=0\text{V}$			-1	μA
		$V_{DS}=-20\text{V}, V_{GS}=0\text{V}, T_C=70^\circ\text{C}$			-5	
Gate- Source Leakage Current	I_{GSS}	Forward $V_{GS}=+12\text{V}, V_{DS}=0\text{V}$			+100	nA
		Reverse $V_{GS}=-12\text{V}, V_{DS}=0\text{V}$			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-250\mu\text{A}$	-0.6		-1.4	V
Static Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS}=-4.5\text{V}, I_D=-4.5\text{A}$		0.050	0.065	Ω
		$V_{GS}=-2.7\text{V}, I_D=-3.8\text{A}$		0.070	0.090	
		$V_{GS}=-2.5\text{V}, I_D=-3.7\text{A}$		0.080	0.100	
SWITCHING PARAMETERS (Note 3)						
Total Gate Charge	Q_G	$V_{GS}=-4.5\text{V}, V_{DS}=-10\text{V}, I_D=-4.5\text{A}$		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	$t_{D(ON)}$	$V_{DD}=-10\text{V}, I_D \approx -1.0\text{A}, V_{GEN}=-4.5\text{V}, R_L=10\Omega, R_G=6\Omega$		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 2)	V_{SD}	$I_S=-1.7\text{A}, V_{GS}=0\text{V}$		-0.8	-1.2	V
Body Diode Reverse Recovery Time	t_{RR}	$I_F=-1.7\text{A}, di/dt=100\text{A}/\mu\text{s}$		35	80	ns

Notes: 2. Pulse test; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

3. Guaranteed by design, not subject to production testing.

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