



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.

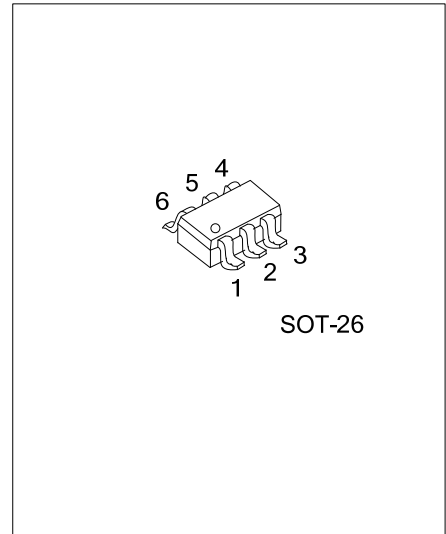
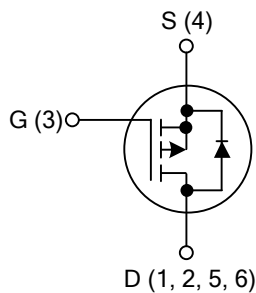
FEATURES

* $V_{DS(V)} = -20V$

* $I_D = -4.5A$

* $R_{DS(ON)} < 100m\Omega @ V_{GS} = -2.5V$,

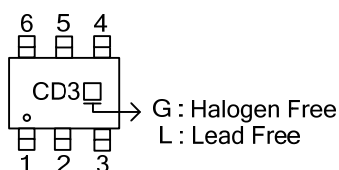
$R_{DS(ON)} < 65m\Omega @ V_{GS} = -4.5V$

SYMBOL**ORDERING INFORMATION**

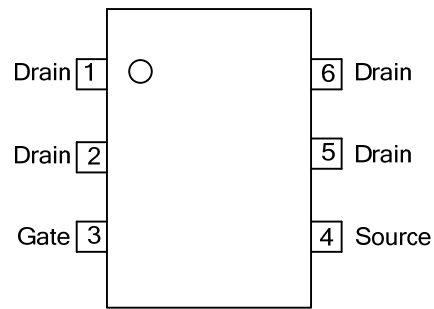
Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1, 2, 5, 6	3	4	
UT3443L-AG6-R	UT3443G-AG6-R	SOT-26	D	G	S	Tape Reel

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

UT3443L-AG6-R	(1) Packing Type	(1) R: Tape Reel
	(2) Package Type	(2) AG6: SOT-26
	(3) Lead Free	(3) G: Halogen Free, L: Lead Free

MARKING

■ PIN CONFIGURATION



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

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V_{DS}	-20	V
Gate-Source Voltage			V_{GS}	± 12	V
Drain Current	Continuous	$T_A=25^{\circ}\text{C}$	I_D	-4.5	A
	$T_J=150^{\circ}\text{C}$ (Note 2)	$T_A=70^{\circ}\text{C}$		-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	$^{\circ}\text{C/W}$

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} =-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 2)		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	
			V _{GS} =-2.5V, I _D =-3.7A		0.080	0.100	
SWITCHING PARAMETERS (Note 3)							
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 2)		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: 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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