



UTT4850

Preliminary

Power MOSFET

N-CHANNEL POWER MOSFET

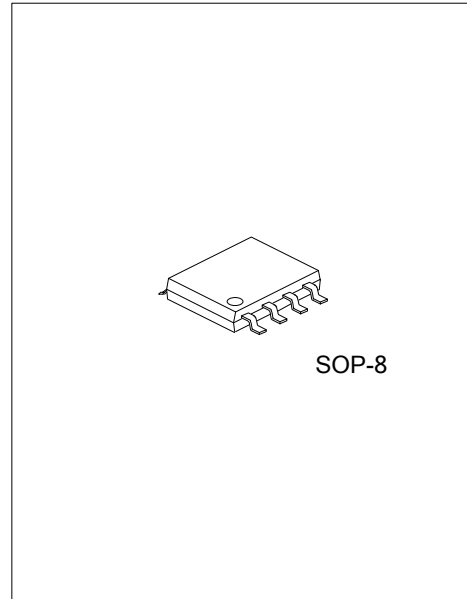
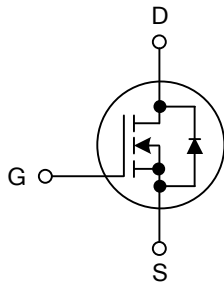
DESCRIPTION

The UTC **UTT4850** is an N-channel, it uses UTC's advanced technology to provide the customers with a minimum on state resistance and high switching speed.

FEATURES

- * $R_{DS(ON)} < 25m\Omega @ V_{GS}=10V, I_D=6.0A$
- $R_{DS(ON)} < 31m\Omega @ V_{GS}=4.5V, I_D=5.1A$
- * High switching speed

SYMBOL



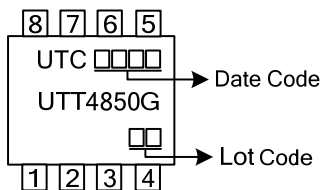
ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UTT4850G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UTT4850G-S08-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) S08: SOP-8 (3) G: Halogen Free and Lead Free
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MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	V_{DSS}	60	V	
Gate-Source Voltage	V_{GSS}	± 20	V	
Continuous Drain Current ($T_J=175^\circ\text{C}$) (Note 1)	I_D	$T_A=25^\circ\text{C}$	6.0	A
		$T_A=70^\circ\text{C}$	5.0	A
Pulsed Drain Current	I_{DM}	24	A	
Avalanche Current	I_{AS}	6	A	
Repetitive Avalanche Energy	E_{AS}	120	mJ	
Power Dissipation (Note 1)	P_D	$T_A=25^\circ\text{C}$	1.7	W
		$T_A=70^\circ\text{C}$	1.2	W
Junction Temperature	T_J	-50~+150	$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	-50~+150	$^\circ\text{C}$	

Notes: 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. $L=6.66\text{mH}$, $I_{AS}=6\text{A}$, $V_{DD}=50\text{V}$, $R_G=25\Omega$, Starting $T_J=25^\circ\text{C}$

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note)	θ_{JA}	75	$^\circ\text{C/W}$

Note: Surface Mounted on 1" x 1" FR4 Board.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	60			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$			1	μA
		$V_{DS}=60\text{V}$, $V_{GS}=0\text{V}$, $T_J=55^\circ\text{C}$			20	μA
Gate-Source Leakage Current	I_{GSS}	Forward $V_{GS}=+20\text{V}$, $V_{DS}=0\text{V}$			+100	nA
		Reverse $V_{GS}=-20\text{V}$, $V_{DS}=0\text{V}$			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	1		2.5	V
On State Drain Current (Note 1)	$I_{D(ON)}$	$V_{DS}=2\text{V}$, $V_{GS}=10\text{V}$	40			A
Static Drain-Source On-State Resistance (Note 1)	$R_{DS(ON)}$	$V_{GS}=10\text{V}$, $I_D=6.0\text{A}$		20	25	$\text{m}\Omega$
		$V_{GS}=4.5\text{V}$, $I_D=5.1\text{A}$		22	31	$\text{m}\Omega$
DYNAMIC PARAMETERS (Note 2)						
Input Capacitance	C_{ISS}	$V_{DS}=25\text{V}$, $V_{GS}=0\text{V}$, $f=1.0\text{MHz}$		2500	2700	pF
Output Capacitance	C_{OSS}			185	200	pF
Reverse Transfer Capacitance	C_{RSS}			150	170	pF
Gate Resistance	R_G	$V_{GS}=0.1\text{V}$, $f=1\text{MHz}$	0.5	1.4	2.4	Ω
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=30\text{V}$, $I_D\approx 0.5\text{A}$, $V_{GS}=10\text{V}$, $R_G=25\Omega$		70	90	ns
Rise Time	t_R			80	100	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			750	800	ns
Fall-Time	t_F			165	200	ns
Total Gate Charge	Q_G	$V_{GS}=10\text{V}$, $V_{DS}=50\text{V}$, $I_D=1.3\text{A}$		70	100	nC
Gate to Source Charge	Q_{GS}			8		nC
Gate to Drain Charge	Q_{GD}			13		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage (Note 1)	V_{SD}	$I_S=1.7\text{A}$, $V_{GS}=0\text{V}$		0.8	1.2	V

Notes: 1. Pulse test; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

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

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