



UT4810D

Power MOSFET

N-CHANNEL 30-V (D-S) MOSFET WITH SCHOTTKY DIODE

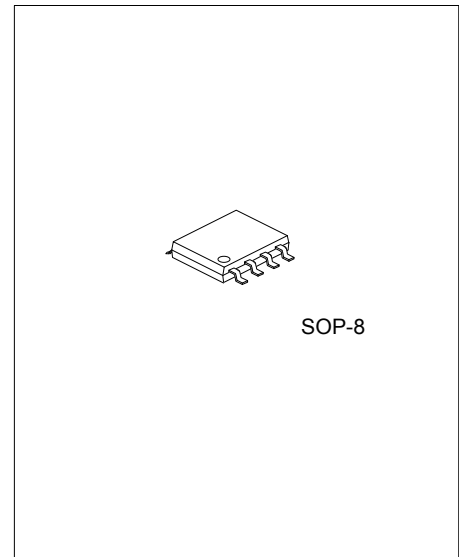
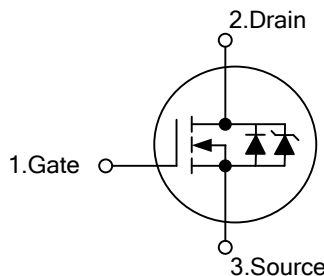
DESCRIPTION

As trench FET Power MOSFETS, N-channel MOSFET with schottky diode, the UTC **UT4810D** shows fast switching and low gate charge features. And it can be used in such applications: DC-DC logic level, low voltage and battery powered.

FEATURES

- * $R_{DS(ON)} < 13.5m\Omega @ V_{GS}=10V, I_D=10A$
- * $R_{DS(ON)} < 20m\Omega @ V_{GS}=4.5V, I_D=5A$
- * Low capacitance
- * Low gate charge
- * Fast switching capability
- * Avalanche energy specified

SYMBOL



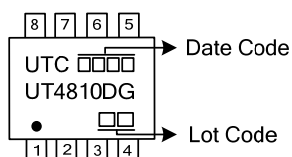
ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT4810DG-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

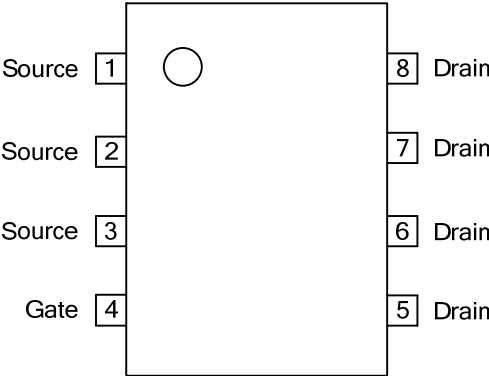
Note: Pin Assignment: G: Gate D: Drain S: Source

<p>UT4810DG-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



■ PIN CONFIGURATION



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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage	MOSFET	V_{DSS}	30	V
	Schottky		30	
Gate-Source Voltage	MOSFET	V_{GSS}	± 20	V
Continuous Drain Current ($T_J=150^\circ\text{C}$)	MOSFET	I_D	7.5	A
Pulsed Drain Current	MOSFET	I_{DM}	50	A
Continuous Source Current	MOSFET	I_S	1.25	A
Average Forward Current	Schottky	I_F	2.4	A
Pulsed Forward Current	Schottky	I_{FM}	40	A
Avalanche Current	L=0.1mH	I_{AS}	25	A
Single-Pulse Avalanche Energy		E_{AS}	78	mJ
Power Dissipation	MOSFET	P_D	1.38	W
	Schottky		1.31	
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.

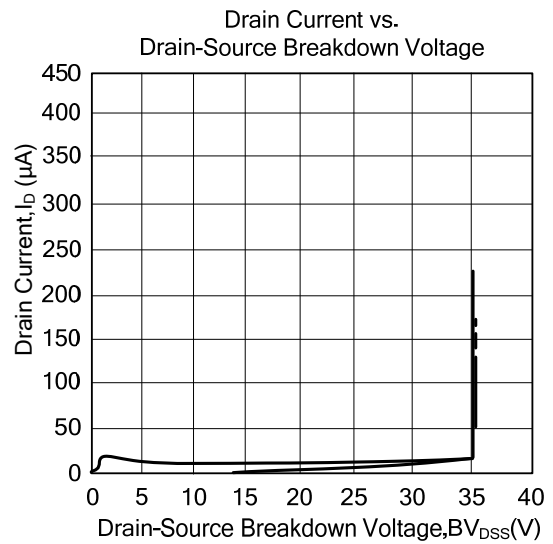
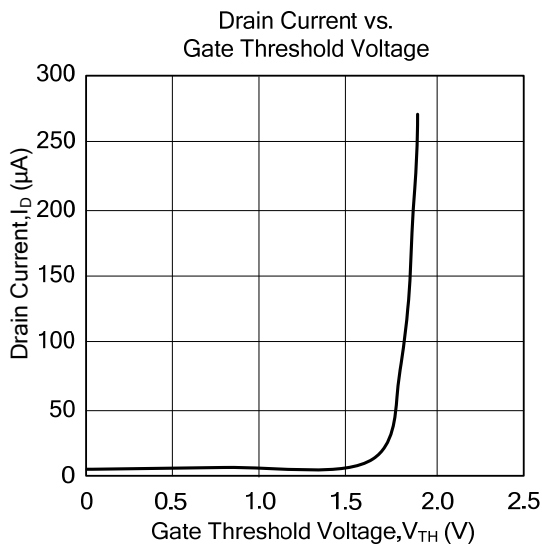
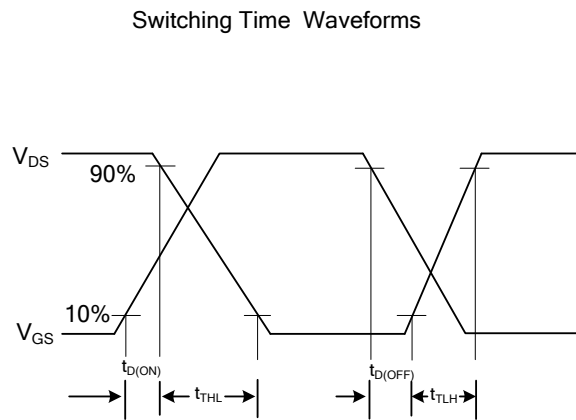
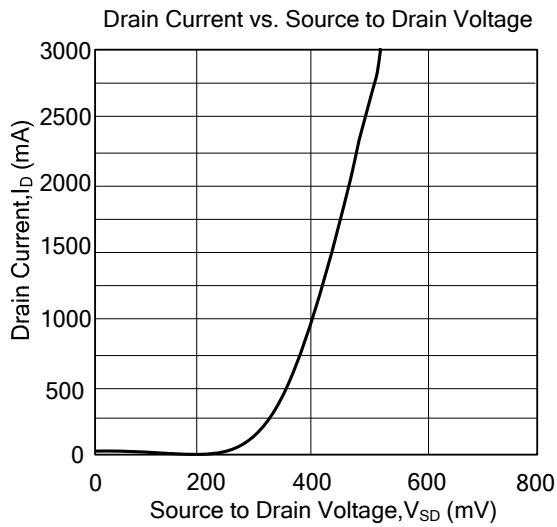
■ THERMAL DATA

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	MOSFET	θ_{JA}		73	90	$^\circ\text{C/W}$
	Schottky			77	95	

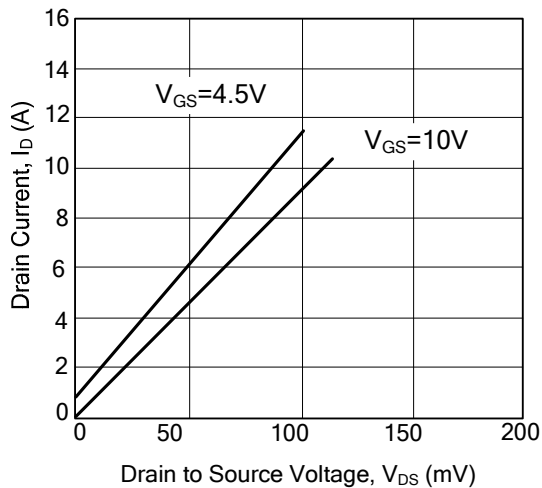
■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Zero Gate Voltage Drain Current (MOSFET+ Schottky)	I_{DSS}	$V_{DS}=30\text{V}, V_{GS}=0\text{V}$		0.007	0.100	mA
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0\text{V}, V_{GS}=\pm 20\text{V}$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$	1		3	V
On State Drain Current	$I_{D(ON)}$	$V_{DS}\geq 5\text{V}, V_{GS}=10\text{V}$	20			A
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10\text{V}, I_D=10\text{A}$		10.5	13.5	m Ω
		$V_{GS}=4.5\text{V}, I_D=5\text{A}$		16	20	
DYNAMIC PARAMETERS						
Gate Resistance	R_G		0.2	0.55	0.9	Ω
SWITCHING PARAMETERS						
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=15\text{V}, R_L=15\Omega, R_G=6\Omega, I_D=1\text{A}, V_{GEN}=10\text{V}$		17	30	ns
Turn-ON Rise Time	t_R			13	20	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			45	90	ns
Turn-OFF Fall-Time	t_F			15	25	ns
Total Gate Charge	Q_G				14.5	22
Gate Source Charge	Q_{GS}	$V_{DS}=15\text{V}, V_{GS}=5\text{V}, I_D=10\text{A}$		6.3		nC
Gate Drain Charge	Q_{GD}			4.7		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	$I_S=3.0\text{A}, V_{GS}=0\text{V}$		0.485	0.53	V
Body Diode Reverse Recovery Time	t_{RR}	$I_F=3.0\text{A}, di/dt=100\text{A}/\mu\text{s}$		36	70	ns

TYPICAL CHARACTERISTICS



Drain-Source On-State Resistance Characteristics



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