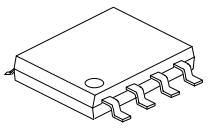
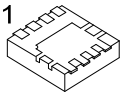
-30V P-CHANNEL ENHANCEMENT MODE MOSFET



SOP-8



DFN3030-8

■ DESCRIPTION

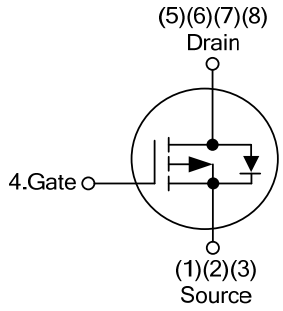
The UTC **UT3008-H** is a P-channel MOSFET, it uses UTC's advanced technology to provide the customers with a minimum on state resistance.

The UTC **UT3008-H** is suitable for backlighting, power management functions and DC-DC converters.

■ FEATURES

* $R_{DS(ON)}$ < 17mΩ @ V_{GS}= -10V, I_D= -10A
  $R_{DS(ON)}$ < 25mΩ @ V_{GS}= -4.5V, I_D= -10A
* Low $R_{DS(ON)}$

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT3008L-S08-R	UT3008G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel
UT3008L-K08-3030-R	UT3008G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tape Reel

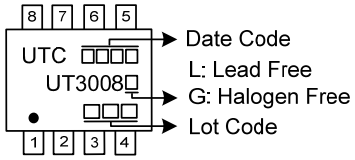
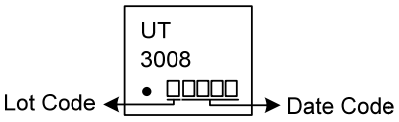
Note: Pin Assignment: G: Gate D: Drain S: Source

UT3008G-S08-R

(1)Packing Type
(2)Package Type
(3)Green Package

(1) R: Tape Reel
(2) S08: SOP-8, K08-3030: DFN3030-8
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING

SOP-8	DFN3030-8
	

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

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V_{DSS}	-30	V
Gate-Source Voltage			V_{GSS}	±20	V
Continuous Drain Current (Note 2) (T_A=25°C) V_{GS}=-10V			I_D	-11.7	A
Pulsed Drain Current (10μs Pulse, Duty Cycle=1%)			I_{DM}	-80	A
Maximum Continuous Body Diode Forward Current (Note 2)			I_S	-3.0	A
Total Power Dissipation	(Note 1)	SOP-8	P_D	1.4	W
		DFN3030-8		0.9	W
	(Note 2)	SOP-8 DFN3030-8		2.2	W
Junction Temperature			T_J	+150	°C
Storage Temperature Range			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 (T_A=25°C unless otherwise specified)

PARAMETER		SYMBOL	VALUE	UNIT
Junction to Ambient (Note 1)	SOP-8	θ_{JA}	89	°C/W
	DFN3030-8		140	°C/W
Junction to Ambient (Note 2)	SOP-8		56	°C/W
	DFN3030-8		57	°C/W
Junction-to-Case (Note 2)	SOP-8	θ_{JC}	2.5	°C/W
	DFN3030-8		7.1	°C/W

Notes: 1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.
2. Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC PARAMETERS (Note 1)							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=-250μA, V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current		I_{DSS}	V_{DS}=-30V, V_{GS}=0V			-1.0	μA
Gate-Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			+100	nA
	Reverse		V_{GS}=-20V, V_{DS}=0V			-100	nA
ON CHARACTERISTICS (Note 1)							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=-250μA	-1.1	-1.6	-2.1	V
Static Drain-Source On-State Resistance		$R_{DS(ON)}$	V_{GS}=-10V, I_D=-10A		12.5	17	mΩ
			V_{GS}=-4.5V, I_D=-10A		18.5	25	mΩ
DYNAMIC PARAMETERS (Note 2)							
Input Capacitance		C_{ISS}	V_{GS}=0V, V_{DS}=-25V, f=1.0MHz		880		pF
Output Capacitance		C_{OSS}			145		pF
Reverse Transfer Capacitance		C_{RSS}			140		pF
Gate Resistance		R_G	V_{DS}=0V, V_{GS}=0V, f=1.0MHz		6.4		Ω
SWITCHING PARAMETERS							
Total Gate Charge		Q_G	V_{GS}=-10V, V_{DS}=-15V, I_D=-0.5A I_G=-100μA		76.4		nC
Gate to Source Charge		Q_{GS}			4.8		nC
Gate to Drain Charge		Q_{GD}			3.6		nC
Turn-ON Delay Time		$t_{D(ON)}$	V_{GS}=-10V, V_{DS}=-15V, R_G=6Ω I_D=-0.5A		50		ns
Rise Time		t_R			49		ns
Turn-OFF Delay Time		$t_{D(OFF)}$			460		ns
Fall-Time		t_F			230		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Diode Forward Voltage		V_{SD}	I_S=-1A,V_{GS}=0V		-0.7	-1.0	V

Notes: 1. Short duration pulse test used to minimize self-heating effect.
2. Guaranteed by design. Not subject to product testing.