

**UT3008-H**

Preliminary

Power MOSFET

**-30V P-CHANNEL
ENHANCEMENT MODE
MOSFET****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.

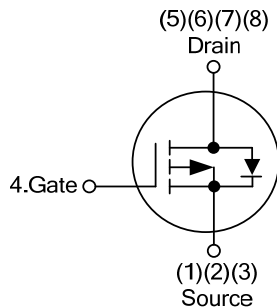
The UTC **UT3008-H** is suitable for backlighting, power management functions and DC-DC converters.

FEATURES

* $R_{DS(ON)} < 17m\Omega$ @ $V_{GS} = -10V$, $I_D = -10A$

$R_{DS(ON)} < 25m\Omega$ @ $V_{GS} = -4.5V$, $I_D = -10A$

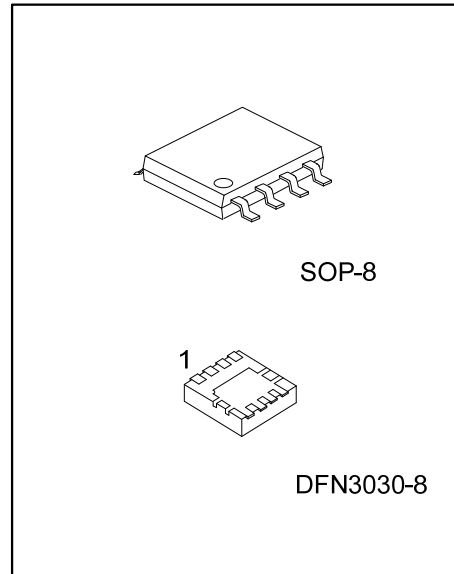
* Low $R_{DS(ON)}$

SYMBOL**ORDERING INFORMATION**

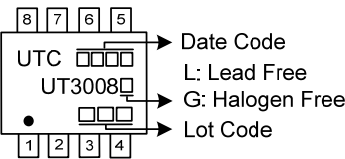
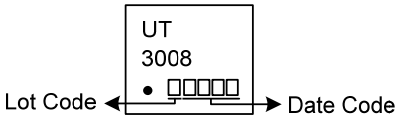
Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT3008L-S08-R	UT3008G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel
UT3008L-K08-3030-R	UT3008G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tape Reel

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

UT3008G-S08-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) S08: SOP-8, K08-3030: DFN3030-8
		(3) Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free



MARKING

SOP-8	DFN3030-8
 8 7 6 5 UTC □ □ □ □ → Date Code UT3008 □ L: Lead Free □ □ □ □ → G: Halogen Free • □ □ □ □ → Lot Code 1 2 3 4	 UT 3008 • □ □ □ □ □ Lot Code ← → Date Code

■ **ABSOLUTE MAXIMUM RATINGS** ($T_A=25^{\circ}\text{C}$ 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		2.2	W
		DFN3030-8			
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** ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

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

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** ($T_A=25^\circ\text{C}$ unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC PARAMETERS (Note 1)							
Drain-Source Breakdown Voltage		BV_{DSS}	$I_D=-250\mu A, V_{GS}=0V$	-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		$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-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	m Ω
			$V_{GS}=-4.5V, I_D=-10A$		18.5	25	m Ω
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	$V_{GS}=-10V, V_{DS}=-15V, I_D=-0.5A$ $I_G=-100\mu A$		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		$t_{D(ON)}$	$V_{GS}=-10V, V_{DS}=-15V, R_G=6\Omega$ $I_D=-0.5A$		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.

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