



**UT3008-H**

**Power MOSFET**

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

■ DESCRIPTION

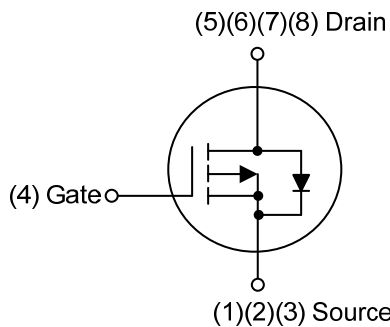
The UTC **UT3008-H** is a P-channel MOSFET, it uses UTC's advanced technology to provide the customers with a minimum on state resistance.

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

■ FEATURES

- \*  $R_{DS(ON)} \leq 17\text{ m}\Omega$  @  $V_{GS}=-10\text{V}$ ,  $I_D=-10\text{A}$
- $R_{DS(ON)} \leq 25\text{ m}\Omega$  @  $V_{GS}=-4.5\text{V}$ ,  $I_D=-10\text{A}$
- \* Low  $R_{DS(ON)}$

■ SYMBOL

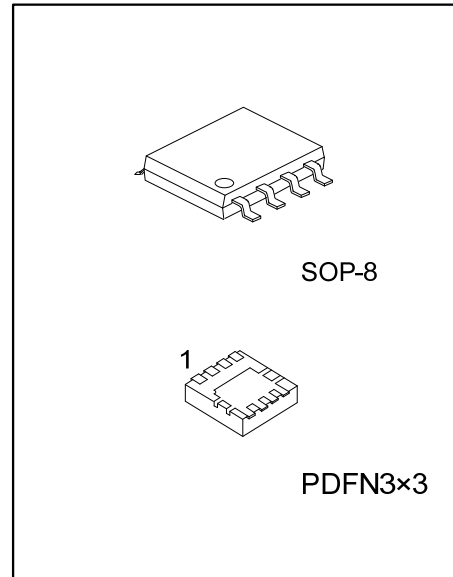


■ ORDERING INFORMATION

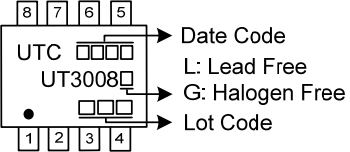
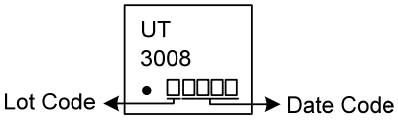
Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT3008L-S08-R	UT3008G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel
UT3008L-P3030-R	UT3008G-P3030-R	PDFN3×3	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UT3008G-S08-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) S08: SOP-8, P3030: PDFN3×3</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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## MARKING

SOP-8	PDFN3x3
 <p>The diagram shows an SOP-8 package with pins numbered 1 to 8. The marking includes:<ul style="list-style-type: none"><li>Top edge: 8, 7, 6, 5</li><li>Bottom edge: 1, 2, 3, 4</li><li>Top-left: UTC</li><li>Top-right: UT3008</li><li>Bottom-left: Lot Code (indicated by a dot and two boxes)</li><li>Bottom-right: Date Code (indicated by two boxes)</li></ul>Legend:<ul style="list-style-type: none"><li>L: Lead Free</li><li>G: Halogen Free</li></ul></p>	 <p>The diagram shows a PDFN3x3 package with the following marking:<ul style="list-style-type: none"><li>Top: UT</li><li>Middle: 3008</li><li>Bottom-left: Lot Code (indicated by a dot and two boxes)</li><li>Bottom-right: Date Code (indicated by two boxes)</li></ul></p>

■ 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		$V_{GSS}$	$\pm 20$	V
Continuous Drain Current		$I_D$	-11.7	A
Pulsed Drain Current		$I_{DM}$	-30	A
Avalanche Energy	Single Pulsed (Note 3)	$E_{AS}$	40	mJ
Power Dissipation	SOP-8	$P_D$	1.8	W
	PDFN3x3		28	W
Junction Temperature		$T_J$	+150	$^{\circ}\text{C}$
Storage Temperature Range		$T_{STG}$	-55 ~ +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. Repetitive Rating: Pulse width limited by maximum junction temperature.

3.  $L = 0.1\text{mH}$ ,  $I_{AS} = -28\text{A}$ ,  $V_{DD} = -25\text{V}$ ,  $R_G = 25\Omega$ , Starting  $T_J = 25^{\circ}\text{C}$

■ THERMAL DATA

PARAMETER		SYMBOL	VALUE	UNIT
Junction to Ambient	SOP-8	$\theta_{JA}$	90	$^{\circ}\text{C/W}$
	PDFN3x3		60	$^{\circ}\text{C/W}$
Junction to Case	SOP-8	$\theta_{JC}$	69	$^{\circ}\text{C/W}$
	PDFN3x3		4.46	$^{\circ}\text{C/W}$

Note: 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
<b>STATIC PARAMETERS (Note 1)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=-250\mu\text{A}$ , $V_{GS}=0\text{V}$	-30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30\text{V}$ , $V_{GS}=0\text{V}$			-1.0	$\mu\text{A}$
Gate-Source Leakage Current	Forward	$I_{GSS}$			+100	nA
	Reverse					
		$V_{GS}=-20\text{V}$ , $V_{DS}=0\text{V}$			-100	nA
<b>ON CHARACTERISTICS (Note 1)</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$ , $I_D=-250\mu\text{A}$	-1.1	-1.6	-2.1	V
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$ , $I_D=-10\text{A}$		12.5	17	m $\Omega$
		$V_{GS}=-4.5\text{V}$ , $I_D=-10\text{A}$		18.5	25	m $\Omega$
<b>DYNAMIC PARAMETERS (Note 2)</b>						
Input Capacitance	$C_{ISS}$	$V_{GS}=0\text{V}$ , $V_{DS}=-25\text{V}$ , $f=1.0\text{MHz}$		2560		pF
Output Capacitance	$C_{OSS}$			356		pF
Reverse Transfer Capacitance	$C_{RSS}$			305		pF
<b>SWITCHING PARAMETERS</b>						
Total Gate Charge	$Q_G$	$V_{GS}=-24\text{V}$ , $V_{DS}=-15\text{V}$ , $I_D=-10\text{A}$ $I_G=-1\text{mA}$		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	$t_{D(ON)}$	$V_{GS}=-10\text{V}$ , $V_{DS}=-15\text{V}$ , $I_D=-10\text{A}$ $R_G=6\Omega$		12		ns
Rise Time	$t_R$			18		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			112		ns
Fall-Time	$t_F$			66		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
Diode Forward Voltage	$V_{SD}$	$I_S=-1.0\text{A}$ , $V_{GS}=0\text{V}$		-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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