



UT8067-H

Preliminary

Power MOSFET

9A, 30V N-CHANNEL POWER MOSFET

DESCRIPTION

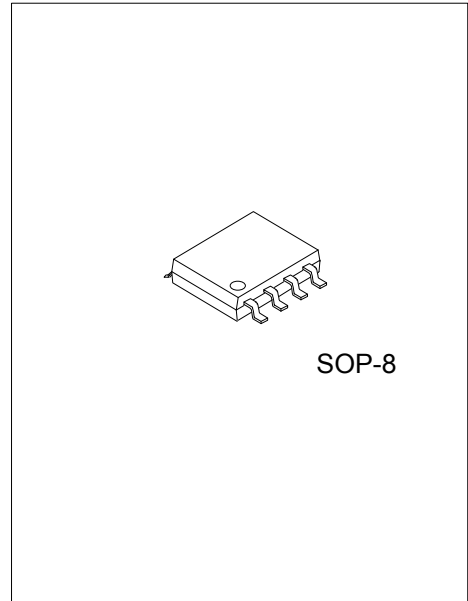
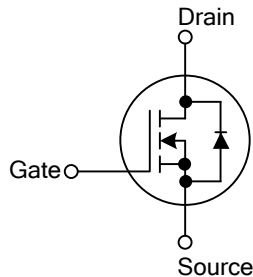
The UTC **UT8067-H** is an N-Channel MOSFET, it uses UTC's advanced technology to provide customers with a minimum on-state resistance, high switching speed and low gate charge, etc.

The UTC **UT8067-H** is suitable for high efficiency fast switching, MB, VGA, Vcore and POL applications.

FEATURES

- * $R_{DS(ON)} \leq 18m\Omega$ @ $V_{GS}=10V, I_D=8A$
- * $R_{DS(ON)} \leq 28m\Omega$ @ $V_{GS}=4.5V, I_D=5A$
- * High switching speed
- * Low gate charge

SYMBOL



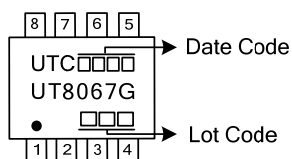
ORDERING INFORMATION

Ordering Number	Package	Pin Assignment								Packing
		1	2	3	4	5	6	7	8	
UT8067G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UT8067G-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 ($T_C=25^\circ\text{C}$, unless otherwise noted)

PARAMETER			SYMBOL	RATINGS	UNIT
Drain-Source Voltage			V_{DSS}	30	V
Gate-Source Voltage			V_{GSS}	± 20	V
Drain Current	Continuous	$T_C=25^\circ\text{C}$	I_D	9	A
		$T_C=100^\circ\text{C}$		5.7	A
	Pulsed (Note 1)		I_{DM}	36	A
Single Pulse Avalanche Current (Note 2)			I_{AS}	8	A
Single Pulse Avalanche Energy (Note 2)			E_{AS}	32	mJ
Power Dissipation	$T_C=25^\circ\text{C}$		P_D	2.5	W
	Derate above 25°C			0.02	W/ $^\circ\text{C}$
Junction Temperature			T_J	-55~+150	$^\circ\text{C}$
Storage Temperature Range			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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	60	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	30			V
BV _{DSS} Temperature Coefficient	ΔBV _{DSS} /ΔT _J	Reference to 25°C, I _D =1mA		0.04		V/°C
Drain-Source Leakage Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V, T _J =25°C			1	μA
		V _{DS} =24V, V _{GS} =0V, T _J =125°C			10	μA
Gate-Source Leakage Current	Forward	V _{GS} =+20V, V _{DS} =0V			+100	nA
	Reverse	V _{GS} =-20V, V _{DS} =0V			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.2	1.6	2	V
V _{GS(TH)} Temperature Coefficient	ΔV _{GS(TH)}			-4		mV/°C
Static Drain-Source On-State Resistance (Note 3)	R _{DS(ON)}	V _{GS} =10V, I _D =8A		16	18	mΩ
		V _{GS} =4.5V, I _D =5A		23	28	mΩ
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =5A		4		S
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		345	500	pF
Output Capacitance	C _{OSS}			55	80	pF
Reverse Transfer Capacitance	C _{RSS}			32	45	pF
Gate Resistance	R _G	V _{GS} =0V, V _{DS} =0V, f=1.0MHz		3.2	6.4	Ω
SWITCHING PARAMETERS						
Total Gate Charge (Note 3, 4)	Q _G	V _{GS} =4.5V, V _{DS} =15V, I _D =8A		4.1	6	nC
Gate to Source Charge (Note 3, 4)	Q _{GS}			1	1.4	nC
Gate to Drain Charge (Note 3, 4)	Q _{GD}			2.1	4	nC
Turn-ON Delay Time (Note 3, 4)	t _{D(ON)}	V _{DD} =15V, V _{GS} =10V, I _D =1A, R _G =6Ω		2.8	5	ns
Rise Time (Note 3, 4)	t _R			7.2	14	ns
Turn-OFF Delay Time (Note 3, 4)	t _{D(OFF)}			15.8	30	ns
Fall-Time (Note 3, 4)	t _F			4.6	9	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Continuous Source Current	I _S	V _G =V _D =0V, Force Current			9	A
Pulsed Source Current (Note 3)	I _{SM}				36	A
Drain-Source Diode Forward Voltage (Note 3)	V _{SD}	I _S =1A, V _{GS} =0V, T _J =25°C			1	V

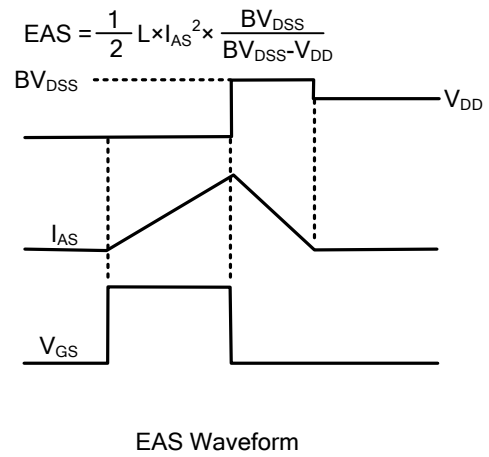
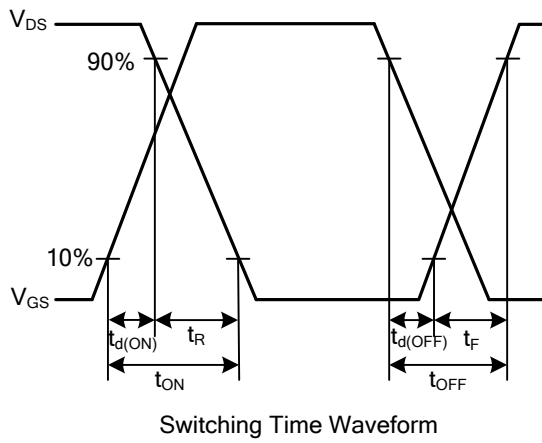
Notes: 1. Repetitive Rating: Pulsed width limited by maximum junction temperature.

2. V_{DD}=25V, V_{GS}=10V, L=1mH, I_{AS}=8A., R_G=25Ω, Starting T_J=25°C.

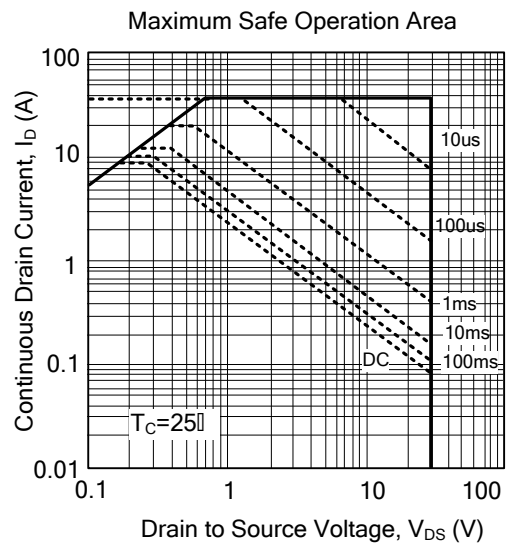
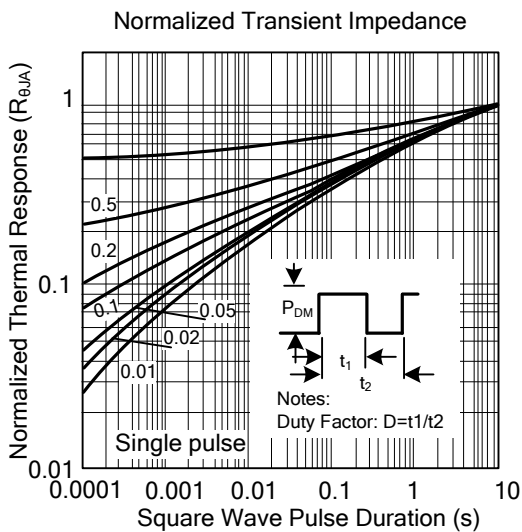
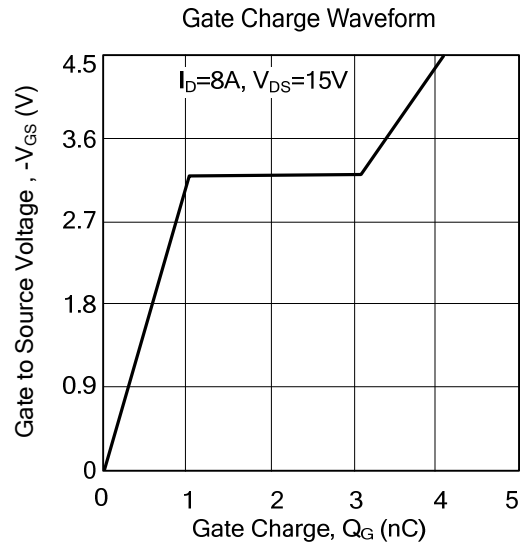
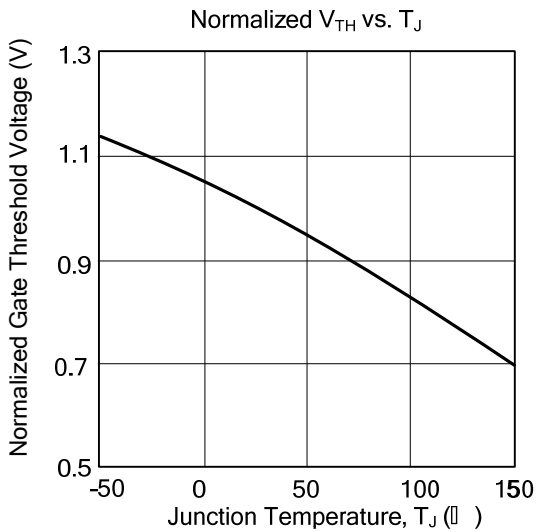
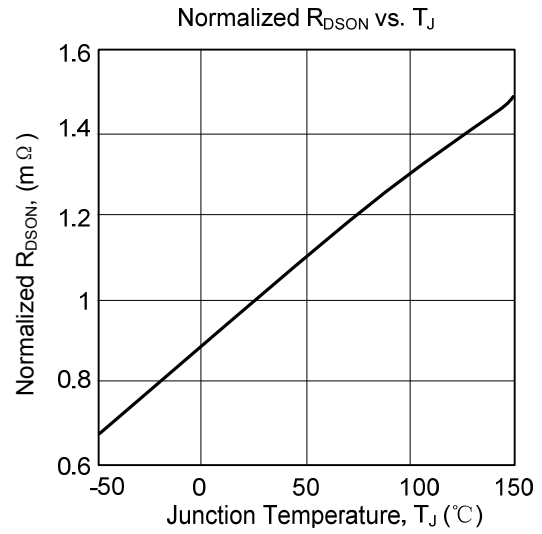
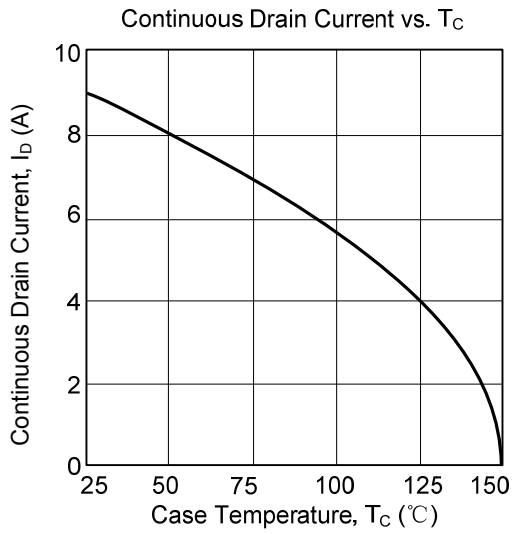
3. The data tested by pulsed, pulse width≤300μs, duty cycle≤2%.

4. Essentially independent of operating temperature.

■ TEST CIRCUITS AND WAVEFORMS



■ TYPICAL CHARACTERISTICS



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