



UTM4953-H

POWER MOSFET

-5A, -30V P-CHANNEL MOSFET

■ DESCRIPTION

The UTC **UTM4953-H** is a P-Channel MOSFET, it uses UTC's advanced technology to provide the customers with fast switching, etc.

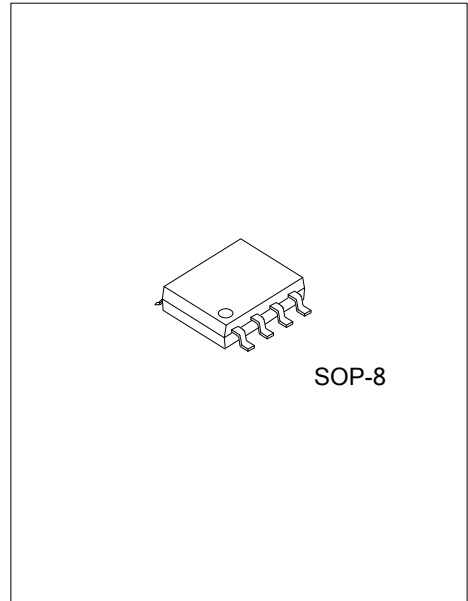
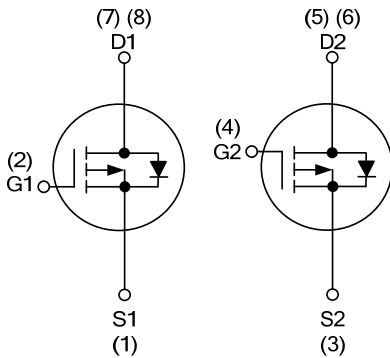
The UTC **UTM4953-H** is suitable for high efficiency fast switching applications, etc.

■ FEATURES

* $R_{DS(ON)} < 55m\Omega @ V_{GS}=-10V, I_D=-3A$

* Fast switching

■ SYMBOL



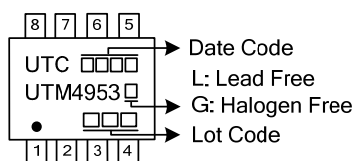
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UTM4953L-S08-R	UTM4953G-S08-R	SOP-8	S1	G1	S2	G2	D2	D2	D1	D1	Tape Reel

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

<p>UTM4953G-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, L: Lead Free
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■ MARKING



■ ABSOLUTE MAXIMUM RATING ($T_C=25^\circ\text{C}$ unless otherwise noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	± 20	V
Continuous Drain Current	$T_C=25^\circ\text{C}$	I_D	-5	A
	$T_C=100^\circ\text{C}$		-3.16	A
Pulsed Drain Current (Note 1)		I_{DM}	-20	A
Power Dissipation	$T_C=25^\circ\text{C}$	P_D	2.1	W
	Derate above 25°C		0.017	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

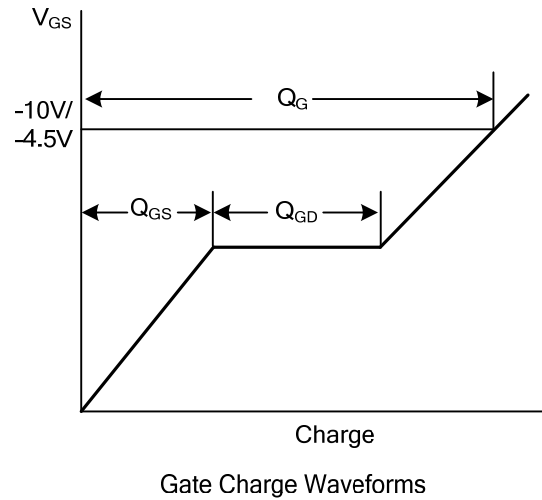
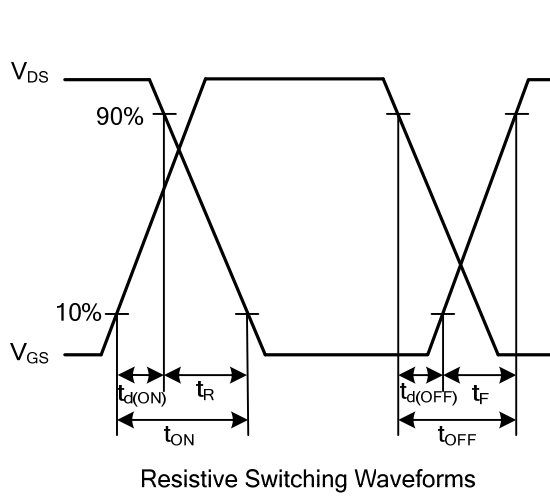
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	60	$^\circ\text{C}/\text{W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu\text{A}$, $V_{GS}=0\text{V}$	-30			V
BV_{DSS} Temperature Coefficient	$\Delta BV_{DSS}/\Delta T_J$	Reference to 25°C , $I_D=-1\text{mA}$		-0.03		V/ $^\circ\text{C}$
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-30\text{V}$, $V_{GS}=0\text{V}$, $T_J=25^\circ\text{C}$			-1	μA
		$V_{DS}=-24\text{V}$, $V_{GS}=0\text{V}$, $T_J=125^\circ\text{C}$			-10	μA
Gate-Source Leakage Current	I_{GSS}	Forward $V_{GS}=+20\text{V}$, $V_{DS}=0\text{V}$			+100	nA
		Reverse $V_{GS}=-20\text{V}$, $V_{DS}=0\text{V}$			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=-250\mu\text{A}$	-1.2	-1.6	-2.5	V
$V_{GS(TH)}$ Temperature Coefficient	$\Delta V_{GS(TH)}$			4		mV/ $^\circ\text{C}$
Static Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$, $I_D=-3\text{A}$		45	55	m Ω
		$V_{GS}=-4.5\text{V}$, $I_D=-2\text{A}$		65	85	m Ω
Forward Transconductance	g_{FS}	$V_{DS}=-10\text{V}$, $I_D=-3\text{A}$		3.5		S
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0\text{V}$, $V_{DS}=-15\text{V}$, $f=1.0\text{MHz}$		560	810	pF
Output Capacitance	C_{OSS}			55	80	pF
Reverse Transfer Capacitance	C_{RSS}			40	60	pF
SWITCHING PARAMETERS						
Total Gate Charge (Note 2, 3)	Q_G	$V_{DS}=-15\text{V}$, $V_{GS}=-4.5\text{V}$, $I_D=-3\text{A}$		5.1	7	nC
Gate to Source Charge (Note 2, 3)	Q_{GS}			2	3	nC
Gate to Drain Charge (Note 2, 3)	Q_{GD}			2.2	4	nC
Turn-ON Delay Time (Note 2, 3)	$t_{D(ON)}$	$V_{GS}=-10\text{V}$, $V_{DD}=-15\text{V}$, $I_D=-1\text{A}$, $R_G=6\Omega$		3.4	6	ns
Rise Time (Note 2, 3)	t_R			10.8	21	ns
Turn-OFF Delay Time (Note 2, 3)	$t_{D(OFF)}$			26.9	51	ns
Fall-Time (Note 2, 3)	t_F			6.9	13	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$, $I_S=-1\text{A}$, $T_J=25^\circ\text{C}$			-1	V
Continuous Source Current	I_S	$V_G=V_D=0\text{V}$, Force Current			-5	A
Pulsed Source Current	I_{SM}				-10	A

- Notes: 1. Repetitive Rating: Pulsed width limited by maximum junction temperature
 2. The data tested by pulsed, pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$
 3. Essentially independent of operating temperature

■ TEST CIRCUITS AND WAVEFORMS



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