



**UF601**

*Power MOSFET*

**0.185A, 600V N-CHANNEL DEPLETION-MODE POWER MOSFET**

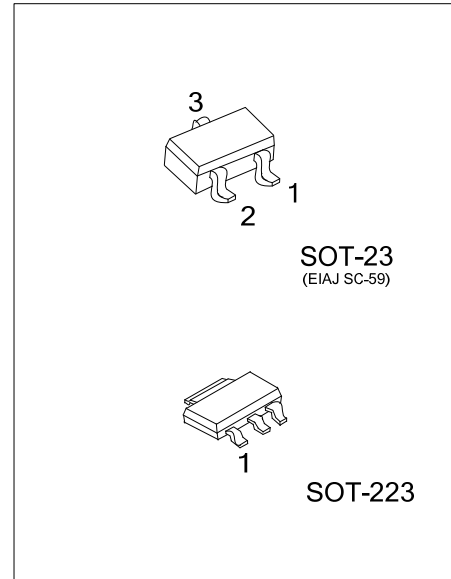
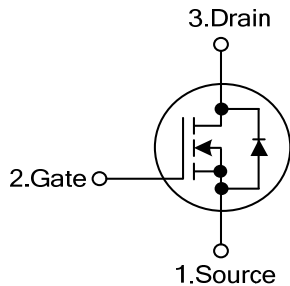
■ DESCRIPTION

The UTC **UF601** is an N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed.

■ FEATURES

- \*  $R_{DS(ON)} < 120\Omega @ V_{GS}=0V, I_D=3mA$
- \* High Switching Speed

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UF601G-AA3-R	SOT-223	S	G	D	Tape Reel
UF601G-AE3-R	SOT-23	S	G	D	Tape Reel

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

<p>UF601G-AA3-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) AA3: SOT-223, AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free</p>
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■ MARKING

SOT-223	SOT-23

■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (Note 2)		V <sub>DSS</sub>	600	V
Drain-Gate Voltage (Note 2)		V <sub>DGX</sub>	600	V
Gate-Source Voltage		V <sub>GSS</sub>	±20	V
Drain Current	Continuous	I <sub>D</sub>	0.185	A
	Pulsed	I <sub>DM</sub>	0.740	A
Power Dissipation	SOT-223	P <sub>D</sub>	0.8	W
	SOT-23		0.5	W
Junction Temperature		T <sub>J</sub>	+150	°C
Storage Temperature		T <sub>STG</sub>	-55~+150	°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. T<sub>J</sub>=+25°C~+150°C

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ <sub>JA</sub>	150	°C/W
	SOT-23		250	°C/W

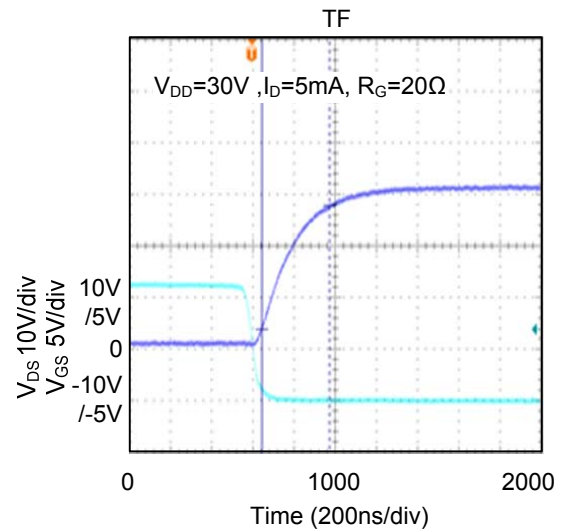
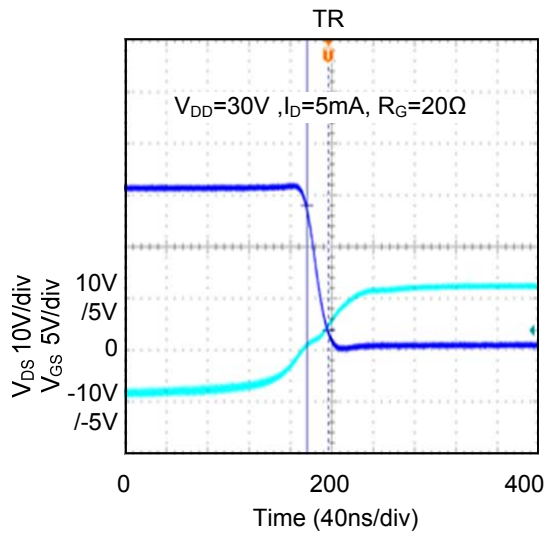
■ ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
<b>OFF CHARACTERISTICS</b>								
Drain-Source Breakdown Voltage		BV <sub>DSS</sub>	I <sub>D</sub> =250μA, V <sub>GS</sub> =-5V	600			V	
Drain-Source Leakage Current		I <sub>D(OFF)</sub>	V <sub>DS</sub> =600V, V <sub>GS</sub> =-5V			0.1	μA	
Gate-Source Leakage Current	Forward	I <sub>GSS</sub>	V <sub>GS</sub> =+20V, V <sub>DS</sub> =0V			+100	nA	
	Reverse		V <sub>GS</sub> =-20V, V <sub>DS</sub> =0V			-100	nA	
<b>ON CHARACTERISTICS</b>								
Gate to Source Cut Off Voltage		V <sub>GS(OFF)</sub>	V <sub>DS</sub> =3V, I <sub>D</sub> =8μA	-2.7		-1.5	V	
Drain-Source Leakage Current		I <sub>DSS</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V	7.0			mA	
Static Drain-Source On-State Resistance		R <sub>DS(ON)</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =3mA		60	120	Ω	
<b>DYNAMIC PARAMETERS</b>								
Input Capacitance		C <sub>ISS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =25V, f=1.0MHz		53		pF	
Output Capacitance		C <sub>OSS</sub>				3000		pF
Reverse Transfer Capacitance		C <sub>RSS</sub>				2.6		pF
<b>SWITCHING PARAMETERS</b>								
Total Gate Charge		Q <sub>G</sub>	V <sub>GS</sub> =-5~5V, V <sub>DS</sub> =30V, I <sub>D</sub> =5mA		7.6		nC	
Gate to Source Charge		Q <sub>GS</sub>				4		nC
Gate to Drain Charge		Q <sub>GD</sub>				0.4		nC
Turn-ON Delay Time		t <sub>D(ON)</sub>	V <sub>GS</sub> =-5~5V, V <sub>DD</sub> =30V, I <sub>D</sub> =5mA, R <sub>G</sub> =20Ω		42		ns	
Rise Time		t <sub>R</sub>				20		ns
Turn-OFF Delay Time		t <sub>D(OFF)</sub>				80		ns
Fall-Time		t <sub>F</sub>				300		ns
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>								
Drain-Source Diode Forward Voltage		V <sub>SD</sub>	I <sub>SD</sub> =3.0mA, V <sub>GS</sub> =-10V			1.4	V	

Note: 1. Repetitive rating, pulse width limited by maximum junction temperature

2. Pulse width≤380μs; duty cycle≤2%

### TYPICAL CHARACTERISTICS



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