



UF601Q

Power MOSFET

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

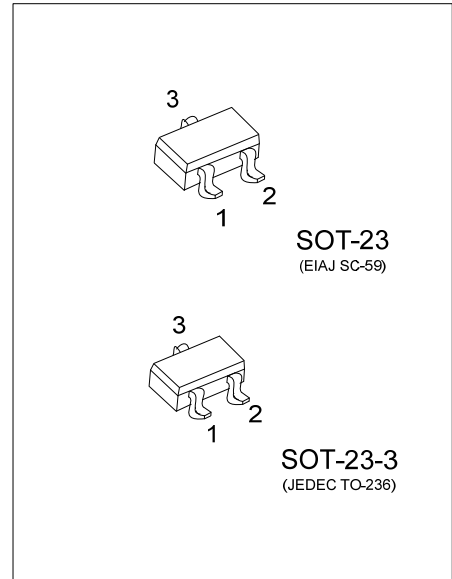
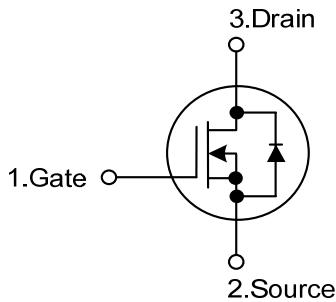
DESCRIPTION

The UTC **UF601Q** is a N-channel power MOSFET using UTC's advanced technology to provide the customers with high switching speed.

FEATURES

- * $R_{DS(ON)} \leq 700 \Omega @ V_{GS}=0V, I_D=3.0mA$
- * High Switching Speed

SYMBOL



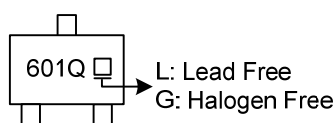
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UF601QL-AE2-R	UF601QG-AE2-R	SOT-23-3	G	S	D	Tape Reel
UF601QL-AE3-R	UF601QG-AE3-R	SOT-23	G	S	D	Tape Reel

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

<p>UF601QG-AE2-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) AE2: SOT-23-3, AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage (Note 2)		V _{DSS}	600	V
Drain-Gate Voltage (Note 2)		V _{DGX}	600	V
Gate-Source Voltage		V _{GSS}	±20	V
Drain Current	Continuous	I _D	0.185	A
	Pulsed	I _{DM}	0.740	A
Power Dissipation		P _D	0.50	W
Junction Temperature		T _J	+150	°C
Storage Temperature		T _{STG}	-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_J=+25°C~+150°C

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	250	°C/W

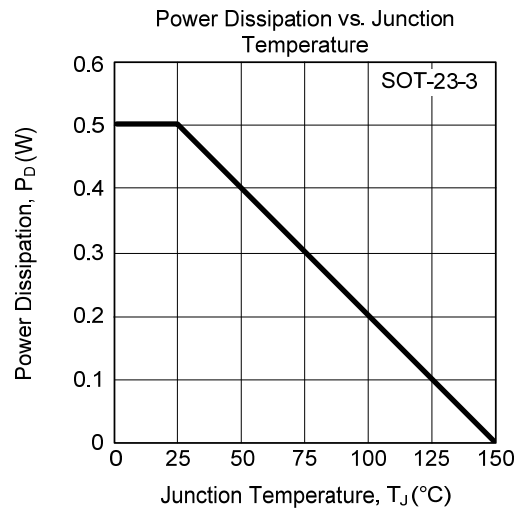
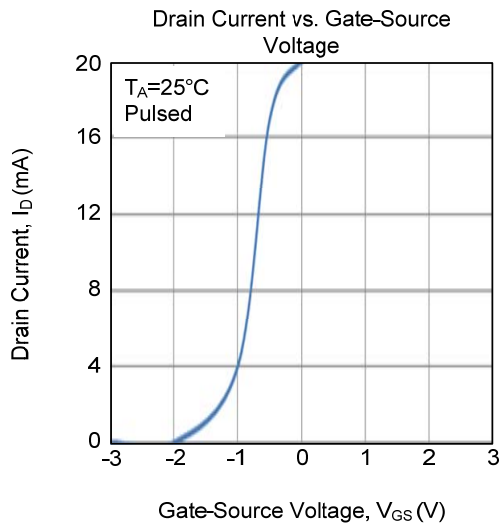
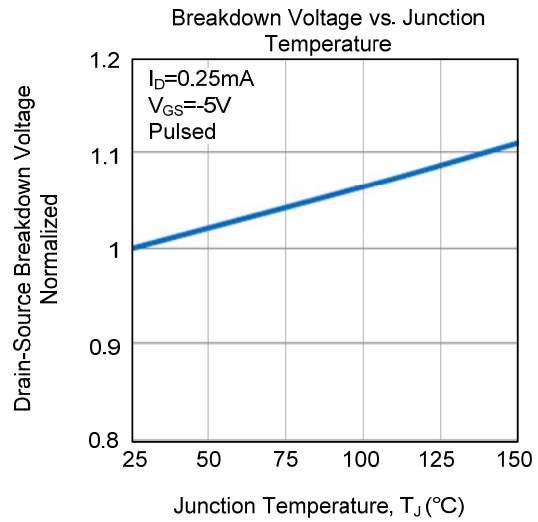
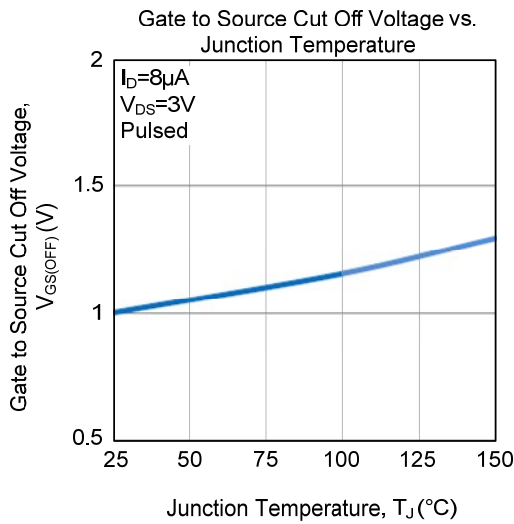
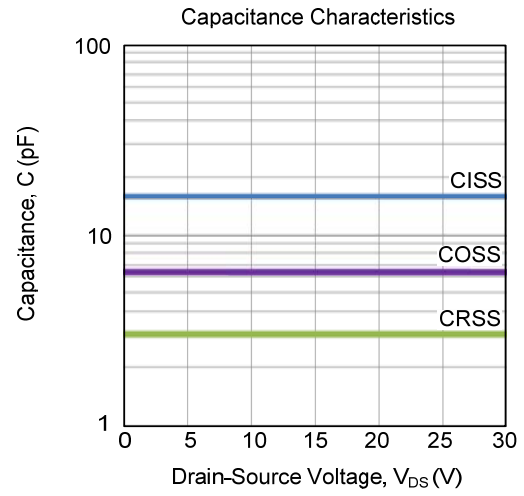
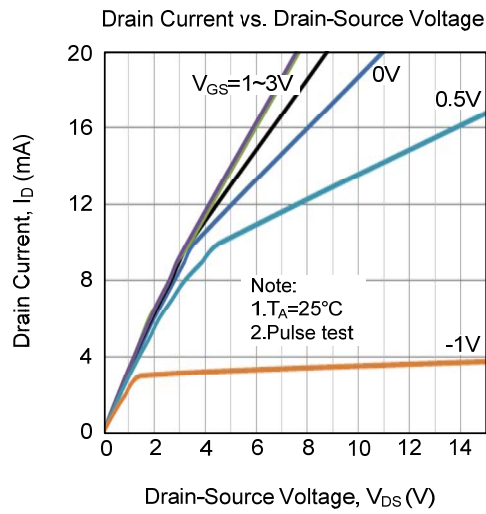
■ ELECTRICAL CHARACTERISTICS (T_A=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =-5V	600			V
Drain-Source Leakage Current		I _{D(OFF)}	V _{DS} =600V, V _{GS} =-5V			0.1	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							
Gate to Source Cut Off Voltage		V _{GS(OFF)}	V _{DS} =3V, I _D =8μA	-1.0		-3.0	V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =25V, V _{GS} =0V	7.0			mA
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =0V, I _D =3mA		300	700	Ω
Forward Trans Conductance		g _{FS}	V _{DS} =20V, I _D =0.01A		0.01		S
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		15		pF
Output Capacitance		C _{OSS}			6		pF
Reverse Transfer Capacitance		C _{RSS}			3		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{GS} =-5~5V, V _{DS} =30V, I _D =5mA		7.6		nC
Gate to Source Charge		Q _{GS}			4		nC
Gate to Drain Charge		Q _{GD}			0.4		nC
Turn-ON Delay Time		t _{D(ON)}	V _{GS} =-5~5V, V _{DD} =30V, I _D =5mA, R _G =20Ω		40		ns
Rise Time		t _R			20		ns
Turn-OFF Delay Time		t _{D(OFF)}			45		ns
Fall-Time		t _F			280		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Drain-Source Diode Forward Voltage		V _{SD}	I _{SD} =3.0mA, V _{GS} =-10V			1.4	V

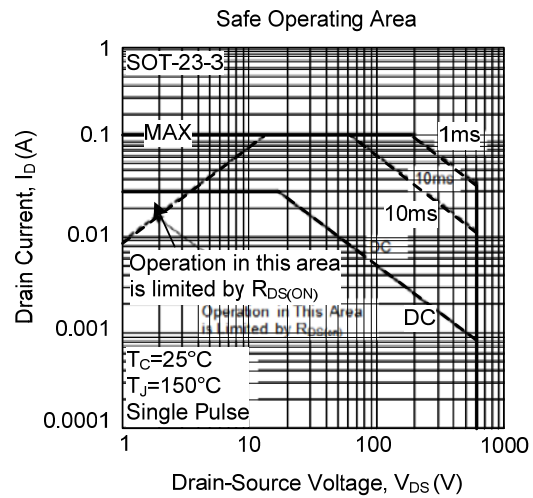
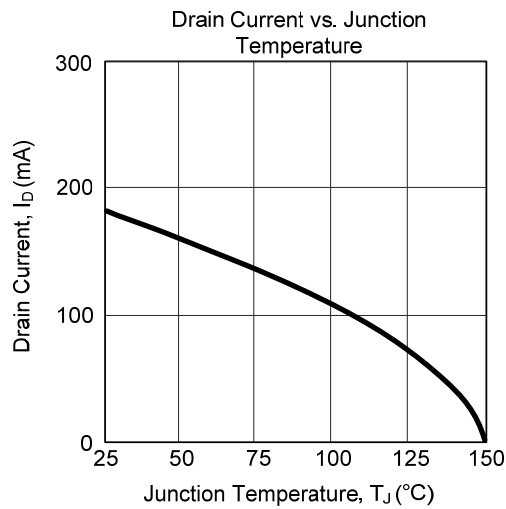
Notes: 1. Repetitive rating, pulse width limited by maximum junction temperature.

2. Pulse width ≤ 380μs; duty cycle ≤ 2%.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS



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