

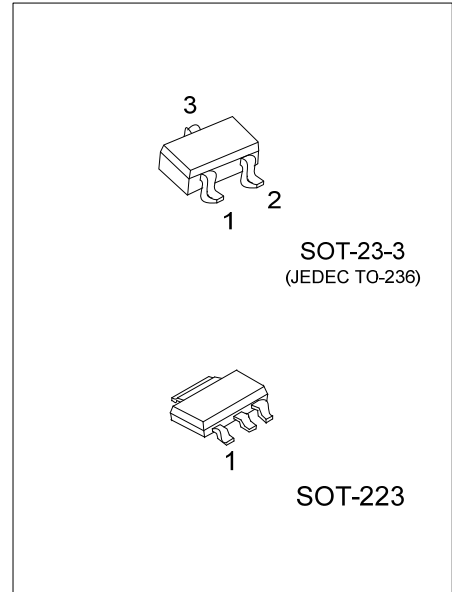
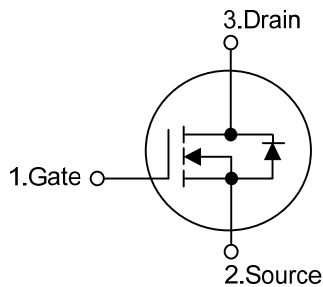
**UTT2N10-H****POWER MOSFET****2.0A, 100V HEXFET POWER MOSFET****DESCRIPTION**

The UTC **UTT2N10-H** is an N-channel Power MOSFET, it uses UTC's advanced technology to provide the customers with high switching speed and low gate charge.

The UTC **UTT2N10-H** is suitable for Load/system switch.

FEATURES

- * $R_{DS(ON)} \leq 220 \text{ m}\Omega$ @ $V_{GS}=10\text{V}$, $I_D=1.6\text{A}$
- $R_{DS(ON)} \leq 235 \text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$, $I_D=1.3\text{A}$
- * High switching speed
- * Low gate charge

SYMBOL**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT2N10L-AA3-R	UTT2N10G-AA3-R	SOT-223	G	D	S	Tape Reel
UTT2N10L-AE2-R	UTT2N10G-AE2-R	SOT-23-3	G	S	D	Tape Reel

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

UTT2N10G-AA3-R (1)Packing Type (2)Package Type (3)Green Package		(1) R: Tape Reel (2) AA3: SOT-223, AE2: SOT-23-3 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

SOT-223	SOT-23-3

■ ABSOLUTE MAXIMUM RATING (T_C=25°C, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	100	V
Gate-Source Voltage		V _{GSS}	±16	V
Drain Current	Continuous	I _D	2	A
	Pulsed (Note 2)	I _{DM}	4	A
Avalanche Energy (Note 3)	Single Pulsed (Note 3)	E _{AS}	0.1	mJ
Peak Diode Recovery dv/dt (Note 4)		dv/dt	2.1	V/ns
Power Dissipation	SOT-223	P _D	1.2	W
	SOT-23-3		0.89	W
Junction Temperature		T _J	+150	°C
Storage Temperature Range		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. Repetitive Rating: Pulse width limited by maximum junction temperature.

3. L = 0.1mH, I_{AS} = 1.3A, V_{DD} = 50V, R_G = 25Ω, Starting T_J = 25°C.

4. I_{SD} ≤ 2.0A, di/dt ≤ 100 A/μs, V_{DD} ≤ V_{(BR)DSS}, T_J = 25°C.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ _{JA}	140	°C/W
	SOT-23-3		177 (Note)	°C/W
Case to Ambient	SOT-223	θ _{JC}	104 (Note)	°C/W
	SOT-23-3		140 (Note)	°C/W

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

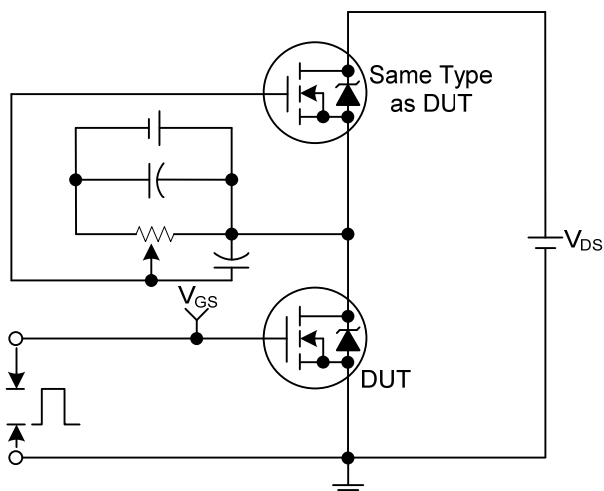
■ **ELECTRICAL CHARACTERISTICS** ($T_J = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	100			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±16V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.0		2.5	V
Drain to Source On-state Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =1.6A			220	mΩ
		V _{GS} =4.5V, I _D =1.3A			235	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =25V, V _{GS} =0V, f =1.0MHz		310		pF
Output Capacitance	C _{OSS}			25		pF
Reverse Transfer Capacitance	C _{RSS}			20		pF
SWITCHING PARAMETERS						
Total Gate Charge (Note 1)	Q _G	V _{DS} =80V, V _{GS} =10V, I _D =2A, I _G =1mA (Note 1, 2)		10		nC
Gate Source Charge	Q _{GS}			2		nC
Gate Drain Charge	Q _{GD}			1		nC
Turn-ON Delay Time (Note 1)	t _{D(ON)}	V _{DD} =50V, V _{GS} =10V, I _D =2A, R _G =25Ω (Note 1, 2)		4		ns
Turn-ON Rise Time	t _R			17		ns
Turn-OFF Delay Time	t _{D(OFF)}			32		ns
Turn-OFF Fall-Time	t _F			25		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	I _S				2	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				4	A
Drain-Source Diode Forward Voltage (Note 1)	V _{SD}	I _S =2A, V _{GS} =0V			1.4	V
Reverse Recovery Time (Note 1)	t _{rr}	I _S =2A, V _{GS} =0V, dI/dt =100A/μs		46		ns
Reverse Recovery Charge	Q _{rr}			48		nC

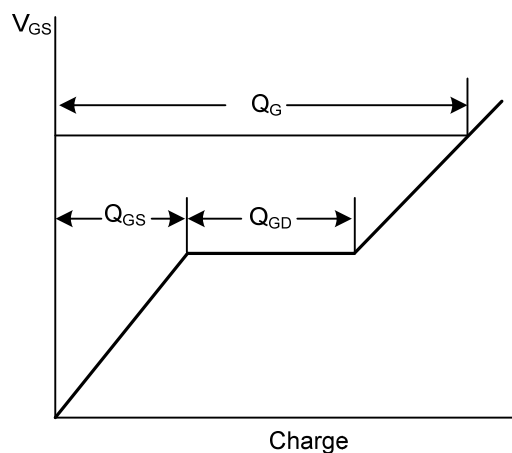
Notes: 1. Pulse Test : Pulse width $\leq 1000\mu s$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating ambient temperature.

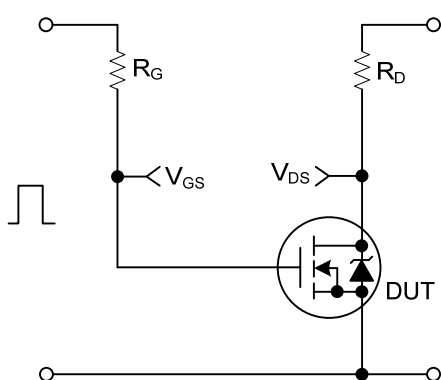
■ TEST CIRCUITS AND WAVEFORMS



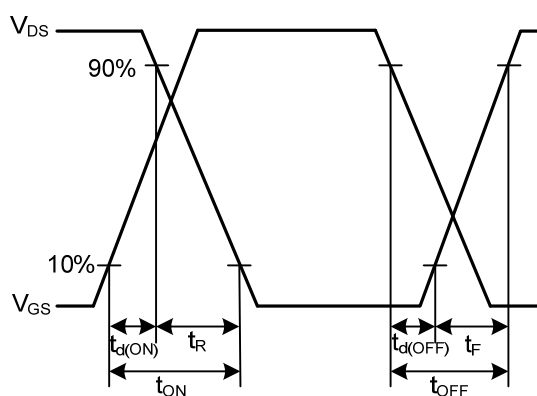
Gate Charge Test Circuit



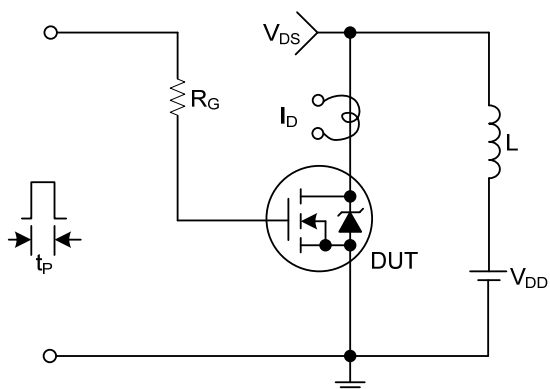
Gate Charge Waveforms



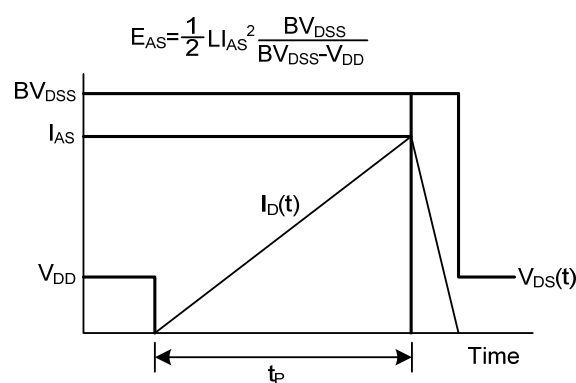
Resistive Switching Test Circuit



Resistive Switching Waveforms

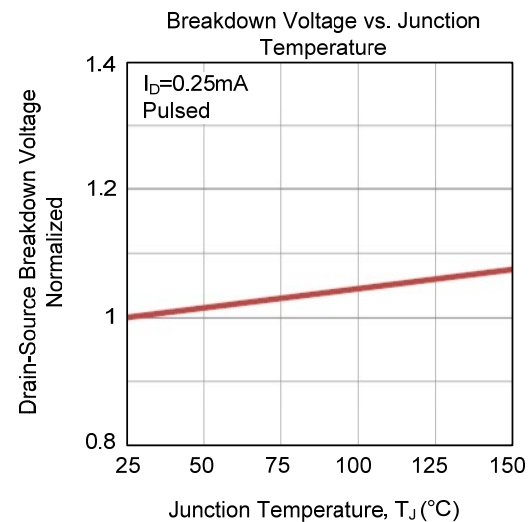
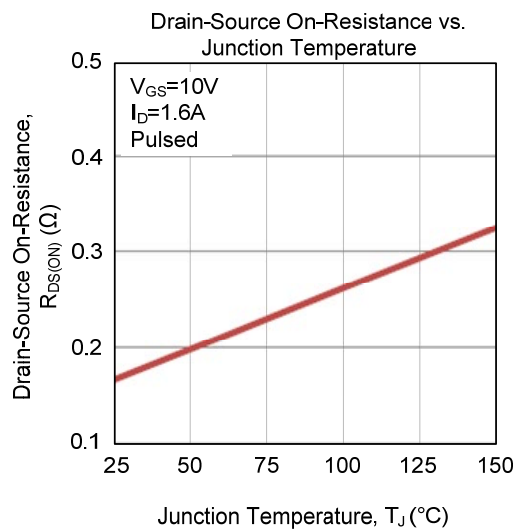
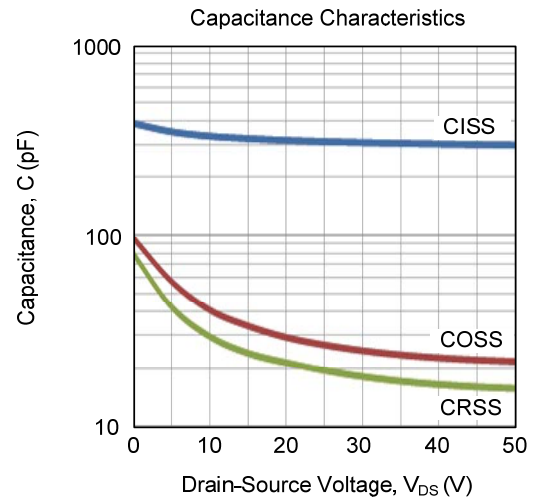
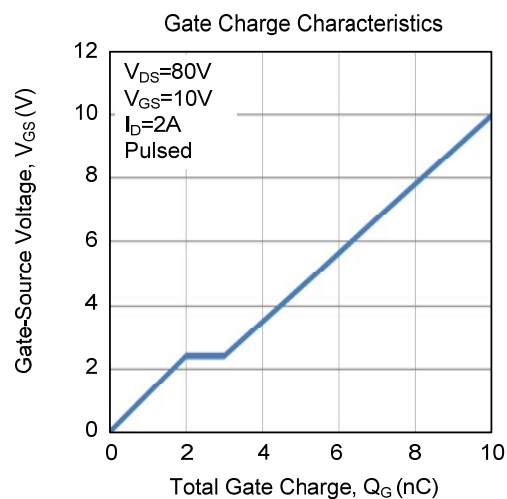
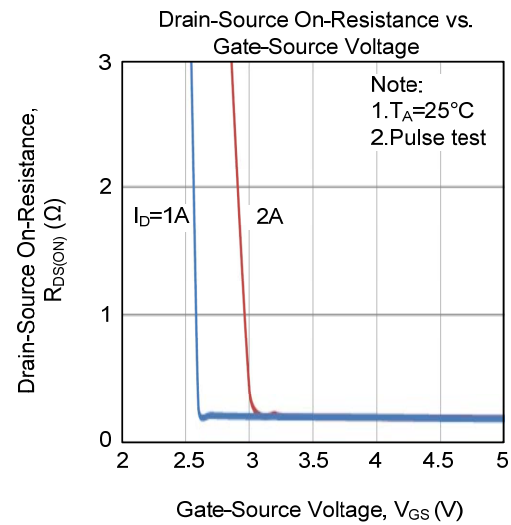
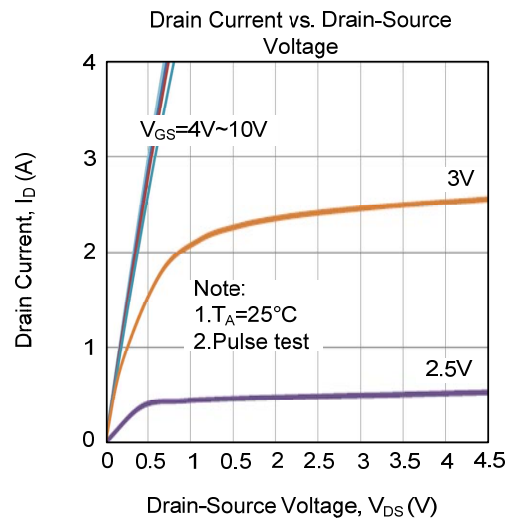


Unclamped Inductive Switching Test Circuit

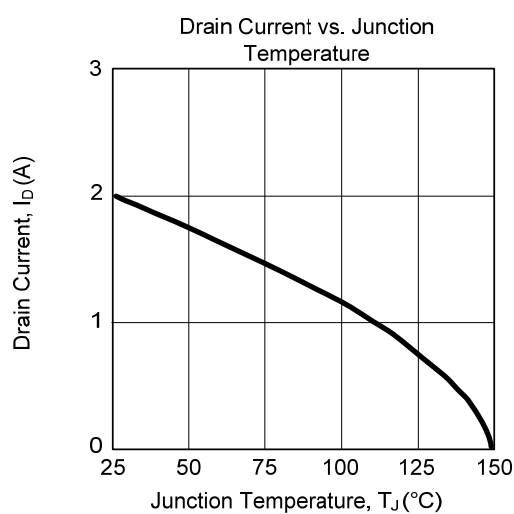
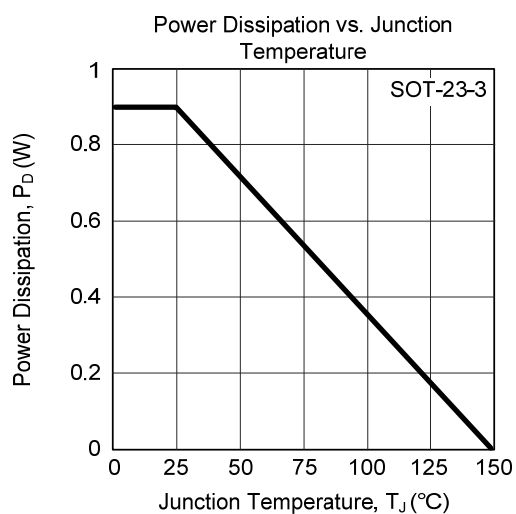
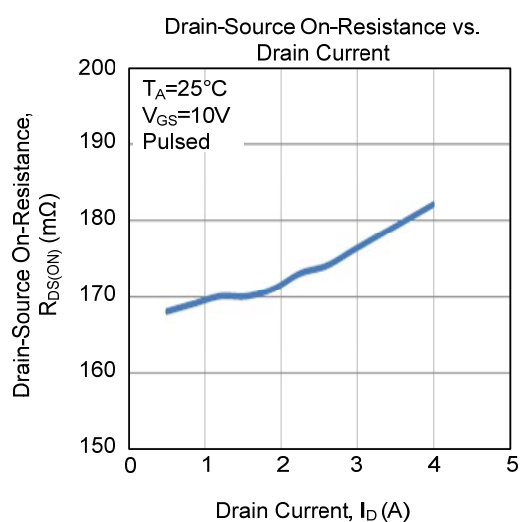
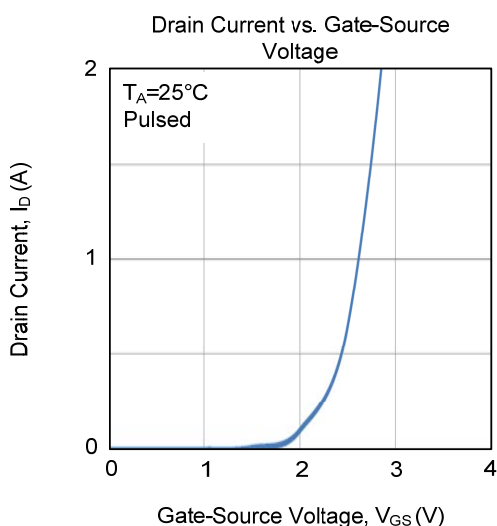
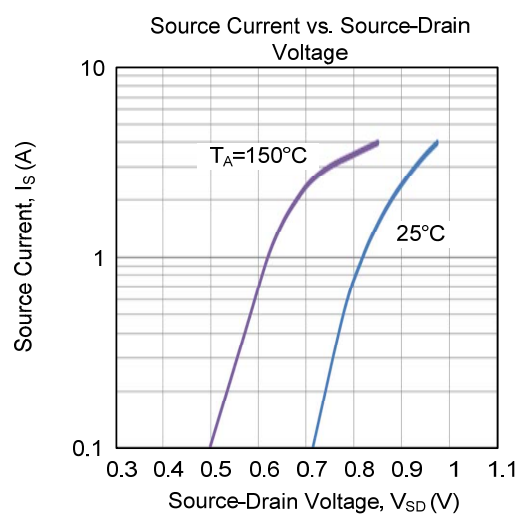
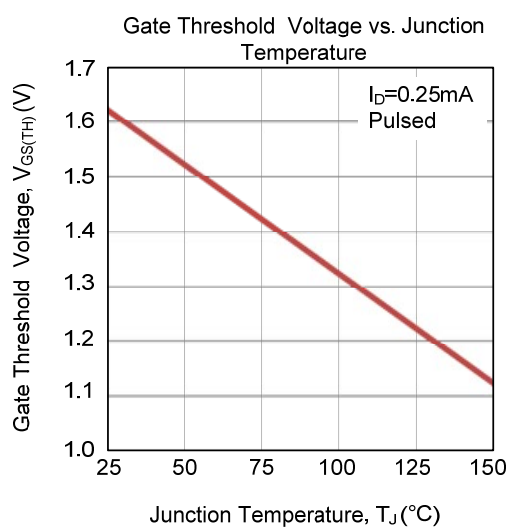


Unclamped Inductive Switching Waveforms

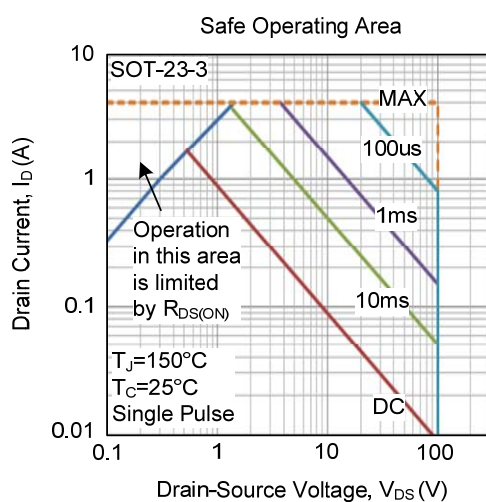
TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



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