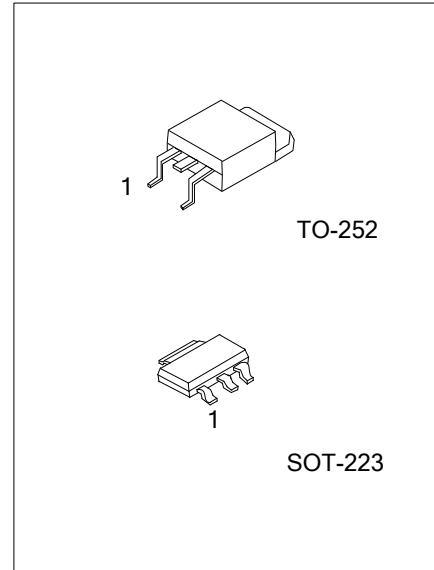




UTT4N10

Power MOSFET

3.5A, 100V N-CHANNEL
TRENCHMOS LOGIC
LEVEL FET



■ DESCRIPTION

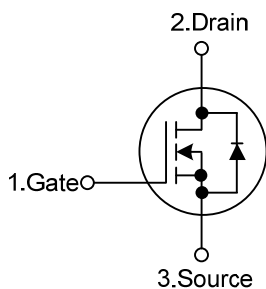
The UTC **UTT4N10** is an N-Channel Trench MOS Logic Level FET, it uses UTC's advanced technology to provide customers with a minimum on-state resistance and low gate charge.

The UTC **UTT4N10** is suitable for consumer, computing and communications, etc.

■ FEATURES

* $R_{DS(ON)} < 250m\Omega @ V_{GS}=5V, I_D=1.75A$

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
-	UTT4N10G-AA3-R	SOT-223	G	D	S	Tape Reel
UTT4N10L-TN3-R	UTT4N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UTT4N10G-AA3-R</p>	<p>(1) R: Tape Reel (2) AA3: SOT-223, TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-223	TO-252

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

PARAMETER		SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	T _J ≥25°C, T _J ≤150°C	V _{DSS}	100	V	
Drain-Gate Voltage	T _J ≥25°C, T _J ≤150°C, R _{GS} =20kΩ	V _{DGR}	100	V	
Gate-Source Voltage		V _{GSS}	±16	V	
Drain Current	Continuous	I _D	T _C =100°C, V _{GS} =5V	2.2	A
			T _C =25°C, V _{GS} =5V	3.5	A
	Pulsed	I _{DM}	T _C =25°C, t _p ≤10μs	14	A
Non-Repetitive Avalanche Current	V _{GS} =5V, V _{DD} ≤15V, R _{GS} =50Ω, Unclamped	I _{AS}	3.5	A	
Non-Repetitive Avalanche Energy	V _{GS} =5V, V _{DD} ≤15V, R _{GS} =50Ω, I _D =3.5A, Unclamped, t _p =0.2ms	E _{AR}	45	mJ	
Power Dissipation	SOT-223	P _D	6.9	W	
	TO-252			W	
Junction Temperature		T _J	-65~+150	°C	
Storage Temperature Range		T _{STG}	-65~+150	°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	SOT-223	θ _{JA}	150	°C/W
	TO-252			°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =0V, T _J =-55°C	89			V
			I _D =250μA, V _{GS} =0V, T _J =25°C	100	130		V
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =+10V, V _{DS} =0V, T _J =25°C		10	100	nA
	Reverse		V _{GS} =-10V, V _{DS} =0V, T _J =25°C		-10	-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA, T _J =25°C	1		3	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =5V, I _D =1.75A, T _J =25°C		200	250	mΩ
			V _{GS} =5V, I _D =1.75A, T _J =150°C			575	mΩ
SWITCHING PARAMETERS							
Turn-ON Delay Time		t _{D(ON)}	V _{DS} =50V, V _{GS} =10V, R _L =0.5Ω, R _{G(ext)} =6Ω, T _J =25°C		30		ns
Rise Time		t _R			30		ns
Turn-OFF Delay Time		t _{D(OFF)}			140		ns
Fall-Time		t _F			30		ns
Total Gate Charge		Q _G			20		nC
Gate to Source Charge		Q _{GS}	V _{GS} =10V, V _{DS} =50V, I _D =1.3A, T _J =25°C		3.7		nC
Gate to Drain Charge		Q _{GD}			3.6		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I _S	T _J =25°C			3.5	A
Maximum Body-Diode Pulsed Current		I _{SM}	T _J =25°C, t _p ≤10μs			14	A
Drain-Source Diode Forward Voltage		V _{SD}	I _S =3.5A, V _{GS} =0V, T _J =25°C		0.87	1.5	V
Body Diode Reverse Recovery Time		t _{RR}	I _S =3.5A, V _{GS} =0V, dI _S /dt=-100A/μs,		50		ns
Body Diode Reverse Recovery Charge		Q _{RR}	V _{DS} =30V, T _J =25°C		100		nC

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