



UTT6N10

Power MOSFET

6A, 100V N-CHANNEL POWER MOSFET

DESCRIPTION

The UTC **UTT6N10** is a N-channel enhancement mode Power FET, it uses UTC's advanced technology to provide customers a minimum on-state resistance, high switching speed and ultra low gate charge.

The UTC **UTT6N10** is usually used in DC-DC Conversion.

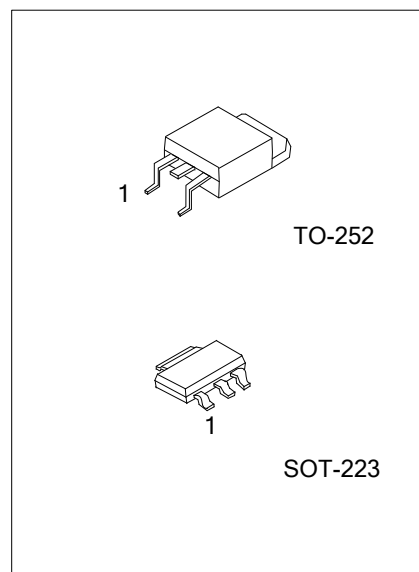
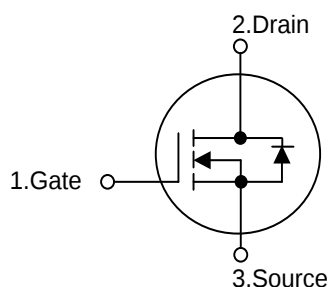
FEATURES

* $R_{DS(on)} \leq 175 \text{ m}\Omega$ @ $V_{GS}=10\text{V}$, $I_D=3.0\text{A}$

$R_{DS(on)} \leq 200 \text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$, $I_D=1.0\text{A}$

* High Switching Speed

SYMBOL



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT6N10L-AA3-R	UTT6N10G-AA3-R	SOT-223	G	D	S	Tape Reel
UTT6N10L-TN3-R	UTT6N10G-TN3-R	TO-252	G	D	S	Tape Reel

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

UTT6N10G-AA3-R (1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) AA3: SOT-223, TN3: TO-252 (3) G: Halogen Free and Lead Free, L: Lead Free
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MARKING

SOT-223	TO-252
UTT6N10 L: Lead Free G: Halogen Free Date Code 1	UTC UTT6N10 L: Lead Free G: Halogen Free Date Code Lot Code 1

■ ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise noted)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V _{DSS}	100	V
Gate-Source Voltage		V _{GSS}	±20	V
Drain Current	Continuous	I _D	6	A
	Pulsed	I _{DM}	24	A
Power Dissipation	SOT-223	P _D	3	W
	TO-252		16	W
Junction Temperature		T _J	+150	°C
Storage Temperature Range		T _{STG}	-55 ~ +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 DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 1)	SOT-223	θ _{JA}	150	°C/W
	TO-252		100	°C/W
Junction to Case	SOT-223	θ _{JC}	41.6	°C/W
	TO-252		7.8	°C/W

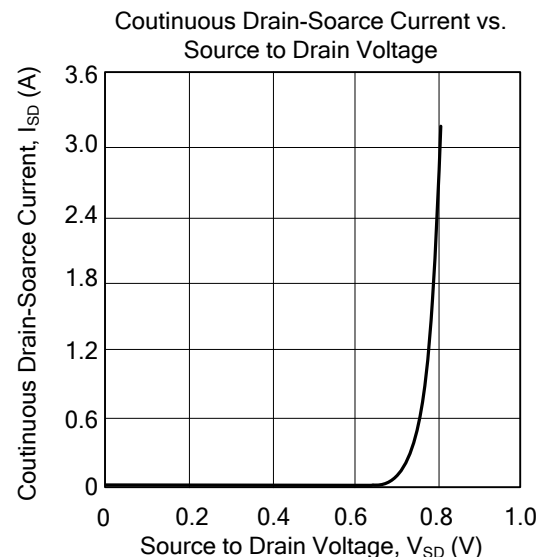
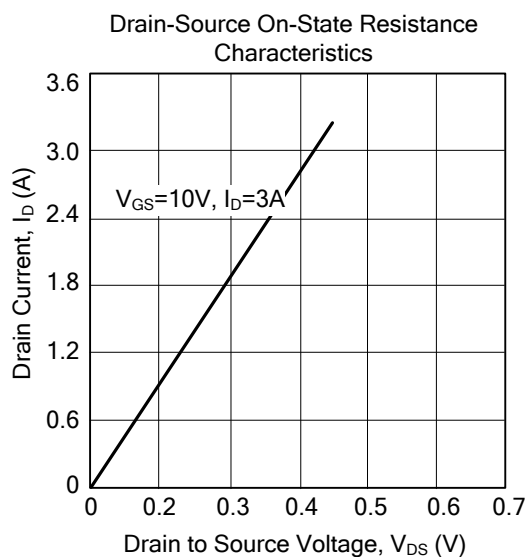
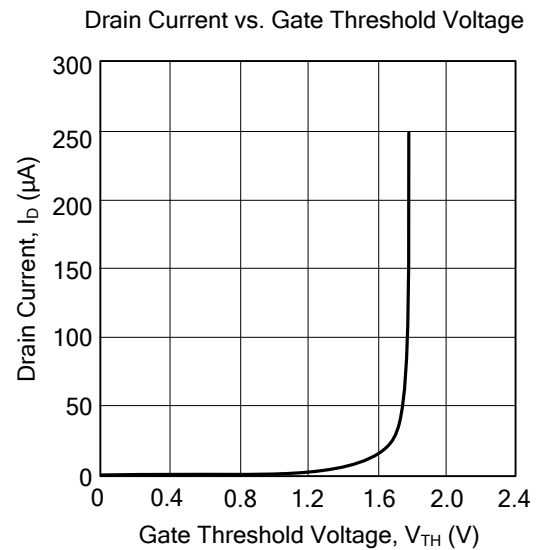
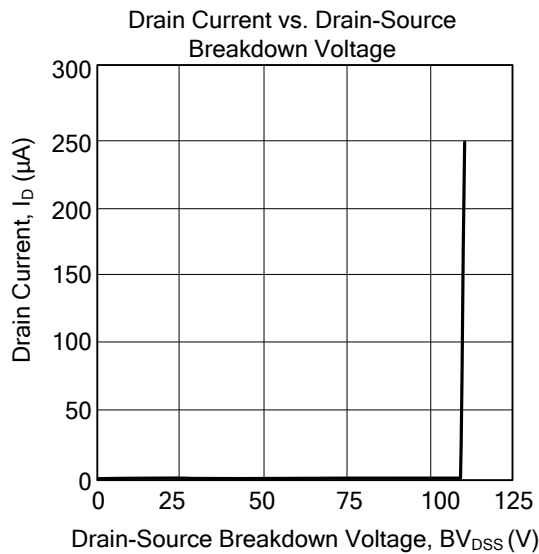
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise noted)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =250μA, V _{GS} =0V	100			V
Drain-Source Leakage Current		I _{DSS}	V _{DS} =80V, V _{GS} =0V			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 (Note 2)							
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.0		3.0	V
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =3.0A		145	175	mΩ
			V _{GS} =4.5V, I _D =1.0A		155	200	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =25V, f=1.0MHz		700	900	pF
Output Capacitance		C _{OSS}			42	60	pF
Reverse Transfer Capacitance		C _{RSS}			10	15	pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{GS} =10V, V _{DD} =80V, I _D =6.0A		23		nC
Gate to Source Charge		Q _{GS}			4.5		nC
Gate to Drain Charge		Q _{GD}			5		nC
Turn-ON Delay Time		t _{D(ON)}	V _{DD} =30V, I _D =0.5A, V _{GS} =10V, R _G =25Ω		32		ns
Rise Time		t _R			28		ns
Turn-OFF Delay Time		t _{D(OFF)}			220		ns
Fall-Time		t _F			41		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I _S				6	A
Source Current Pulsed		I _{SM}				24	A
Drain-Source Diode Forward Voltage		V _{SD}	I _S =3.2A, V _{GS} =0V (Note 2)		0.86	1.3	V

Notes: 1. θ_{JA} is the sum of the junction-to-case and case-to-ambient thermal resistance where the case thermal reference is defined as the solder mounting surface of the drain pins.

2. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%

■ TYPICAL CHARACTERISTICS



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