



UTT75N03

POWER MOSFET

75A, 30V, N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The UTC **UTT75N03** is an N-channel enhancement mode Power MOSFET, it uses UTC's advanced technology to provide the customers with high switching and a minimum on-state resistance.

The UTC **UTT75N03** is suitable for low voltage applications such as DC/DC converters.

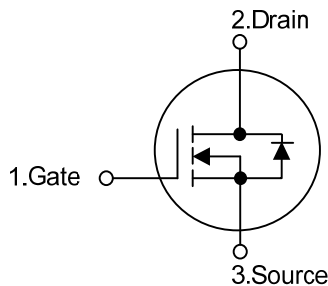
FEATURES

* $R_{DS(ON)} < 4m\Omega @ V_{GS}=10V, I_D=40A$

$R_{DS(ON)} < 7m\Omega @ V_{GS}=4.5V, I_D=30A$

* Low on-resistance

SYMBOL



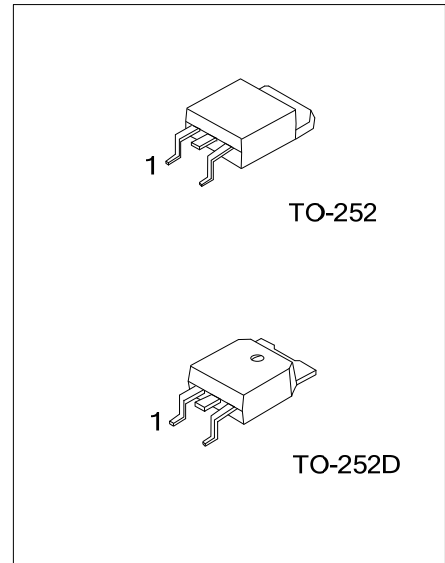
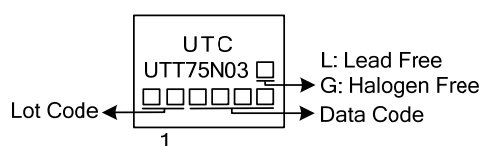
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT75N03L-TN3-R	UTT75N03G-TN3-R	TO-252	G	D	S	Tape Reel
UTT75N03L-TND-R	UTT75N03G-TND-R	TO-252D	G	D	S	Tape Reel

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

<p>UTT75N03L-TN3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) TN3: TO-252, TND: TO-252D (3) L: Lead Free, G: Halogen Free and Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT	
Drain-Source Voltage		V_{DSS}	30	V	
Gate-Source Voltage		V_{GSS}	± 20	V	
Drain Current	Continuous	I_D	$V_{GS}=10V, T_C=25^\circ C$ (Note 4)	75	A
			$V_{GS}=10V, T_C=100^\circ C$	56	A
	Pulsed (Note 1)	I_{DM}	300	A	
Total Power Dissipation		P_D	$T_C=25^\circ C$	50	W
			$T_A=25^\circ C$	2	W
Operating Junction Temperature Range		T_J	-55~+150	$^\circ C$	
Storage Temperature Range		T_{STG}	-55~+150	$^\circ C$	

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 RESISTANCE

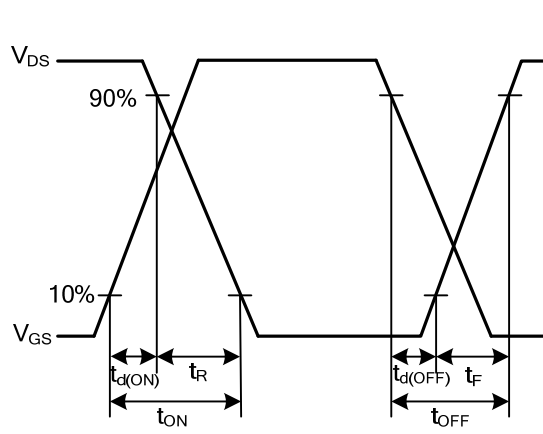
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (PCB Mount) (Note 3)	θ_{JA}	62.5	$^\circ C/W$
Junction to Case	θ_{JC}	2.5	$^\circ C/W$

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

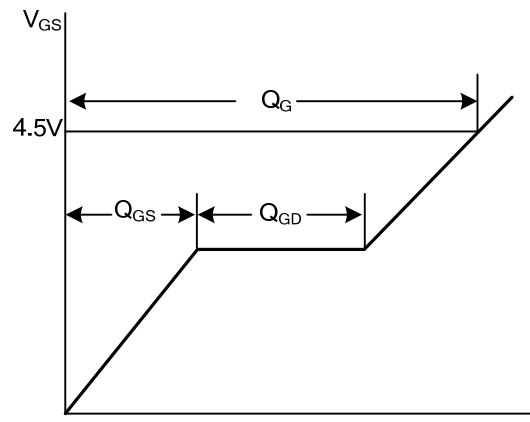
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu A, V_{GS}=0V$	30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$			10	μA
Gate-Source Leakage Current	I_{GSS}	Forward			+100	nA
		Reverse	$V_{GS}=20V, V_{DS}=0V$			-100
ON CHARACTERISTICS						
Static Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=40A$			4	m Ω
		$V_{GS}=4.5V, I_D=30A$			7	m Ω
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		3	V
DYNAMIC PARAMETERS						
Input Capacitance	C_{ISS}	$V_{GS}=0V, V_{DS}=25V, f=1.0MHz$		3900		pF
Output Capacitance	C_{OSS}			640		pF
Reverse Transfer Capacitance	C_{RSS}			510		pF
Gate Resistance	R_G	$f=1.0MHz$		1.5		Ω
SWITCHING PARAMETERS						
Turn-ON Delay Time (Note 2)	$t_{D(ON)}$	$V_{DS}=15V, I_D=0.25A, R_G=25\Omega$ $V_{GS}=10V$		78		ns
Rise Time	t_R			140		ns
Turn-OFF Delay Time	$t_{D(OFF)}$			1100		ns
Fall Time	t_F			530		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Forward On Voltage (Note 2)	V_{SD}	$I_S=40A, V_{GS}=0V$			1.2	V

- Notes: 1. Pulse width limited by max. junction temperature
 2. Pulse test
 3. Surface mounted on 1 in² copper pad of FR4 board
 4. Package limitation current is 75A

■ TEST CIRCUITS AND WAVEFORMS

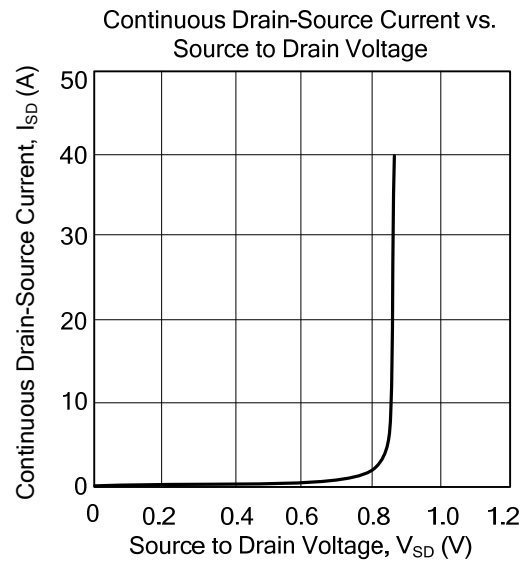
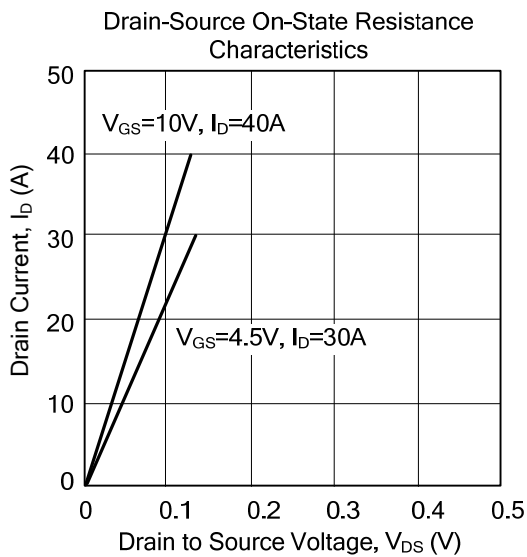
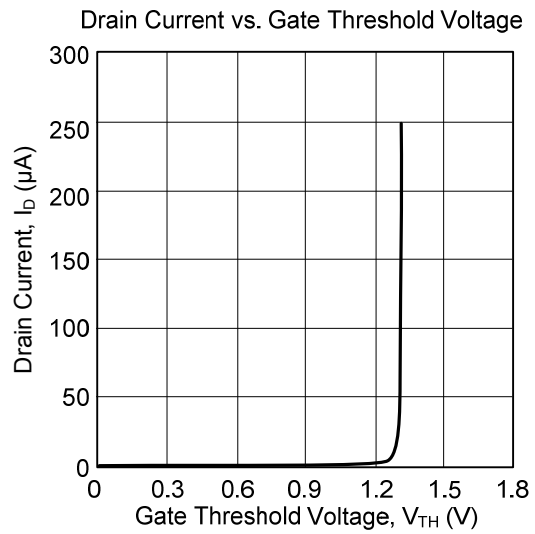
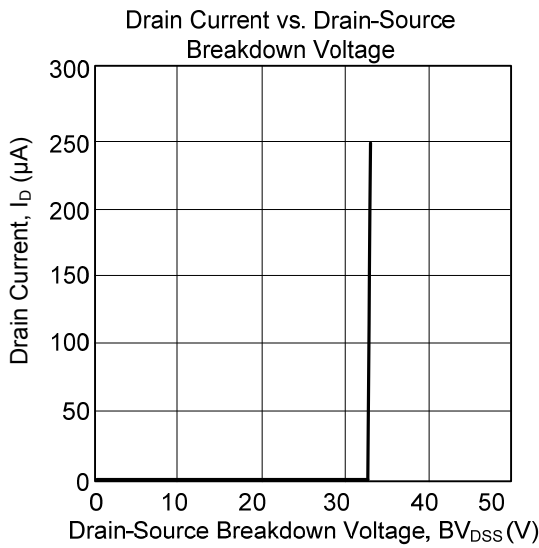


Resistive Switching Waveforms



Gate Charge Waveforms

TYPICAL CHARACTERISTICS



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