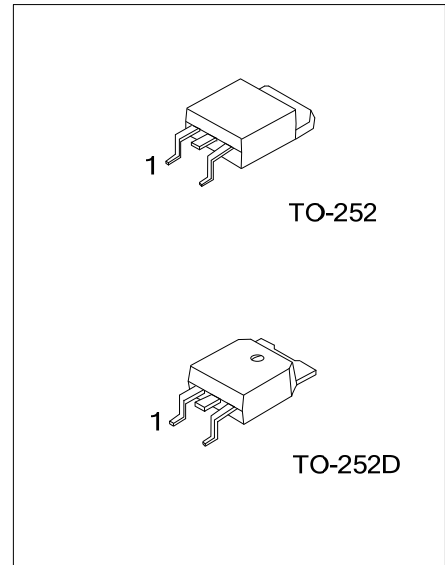




# UTT75N03

## 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.

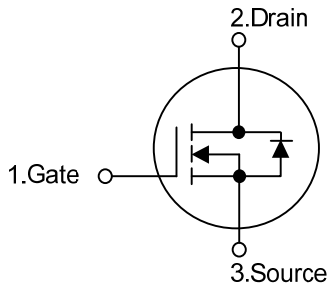
■ FEATURES

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

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

\* Low on-resistance

■ SYMBOL



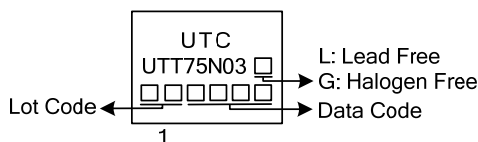
■ ORDERING INFORMATION

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	°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 RESISTANCE

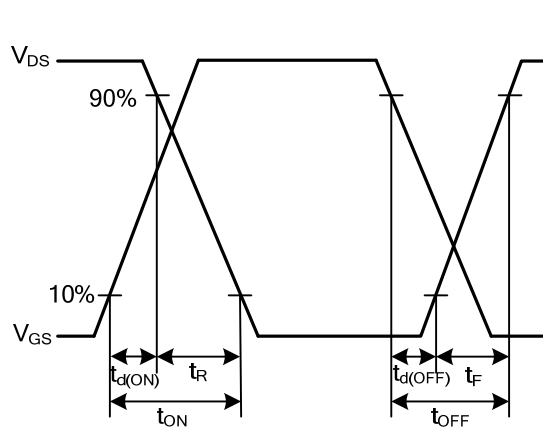
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (PCB Mount) (Note 3)	$\theta_{JA}$	62.5	°C/W
Junction to Case	$\theta_{JC}$	2.5	°C/W

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

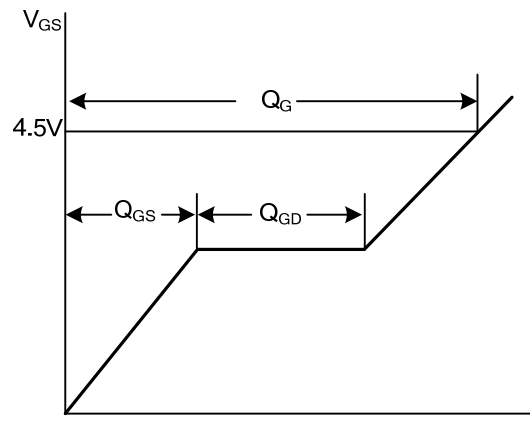
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D=250\mu A, V_{GS}=0V$	30			V
Drain-Source Leakage Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$			10	$\mu A$
Gate-Source Leakage Current	$I_{GSS}$	Forward			+100	nA
		Reverse	$V_{GS}=20V, V_{DS}=0V$			-100
<b>ON CHARACTERISTICS</b>						
Static Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=40A$			4	m $\Omega$
		$V_{GS}=4.5V, I_D=30A$			7	m $\Omega$
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1		3	V
<b>DYNAMIC PARAMETERS</b>						
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		$\Omega$
<b>SWITCHING PARAMETERS</b>						
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
<b>SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS</b>						
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 in<sup>2</sup> copper pad of FR4 board  
 4. Package limitation current is 75A

## ■ TEST CIRCUITS AND WAVEFORMS

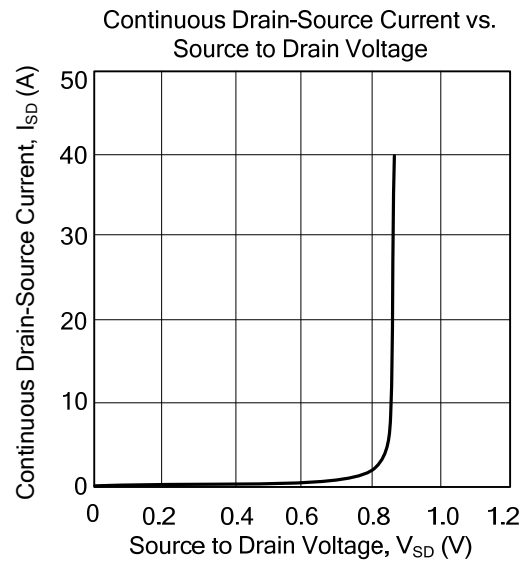
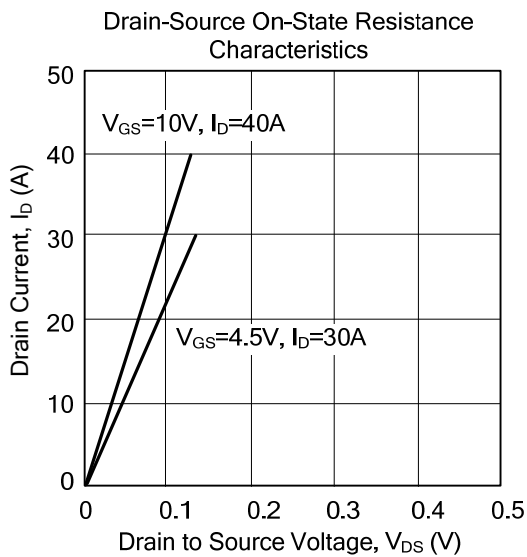
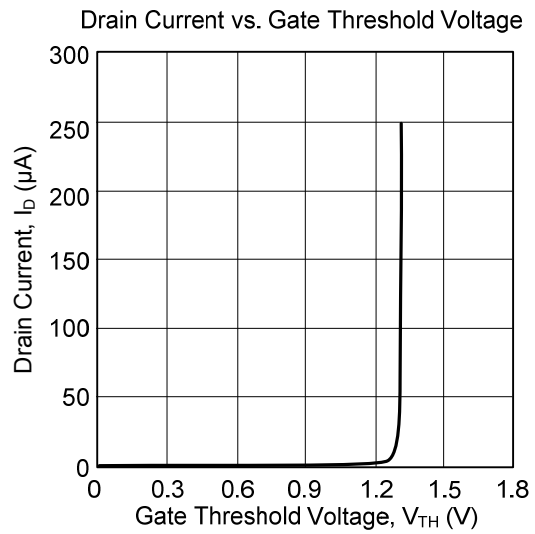
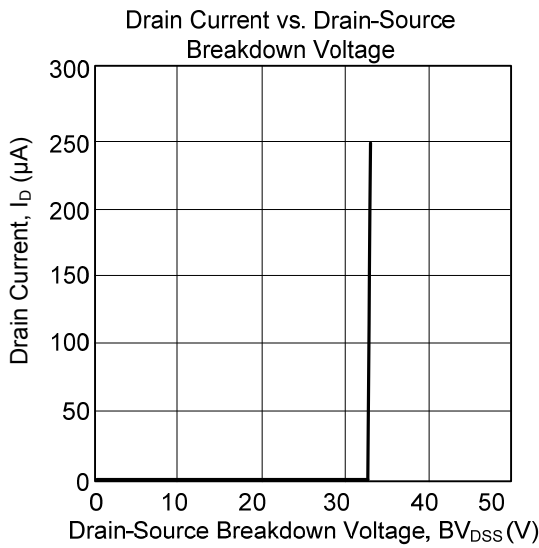


Resistive Switching Waveforms



Gate Charge Waveforms

## TYPICAL CHARACTERISTICS



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