



UT75N03

Power MOSFET

75A, 30V N-CHANNEL POWER MOSFET

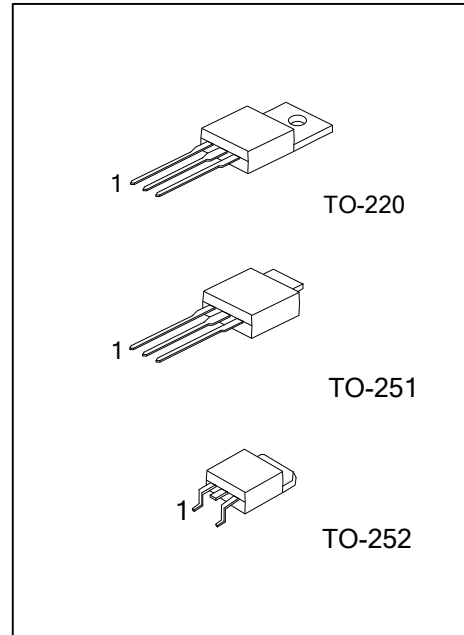
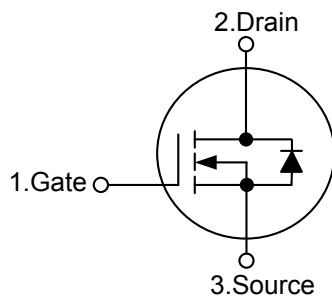
DESCRIPTION

The UTC **UT75N03** uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and operation with low gate voltages. This device is suitable for use as a load switch or in PWM applications.

FEATURES

- * $R_{DS(ON)} < 7m\Omega @ V_{GS}=10V, I_D=30A$
- * $R_{DS(ON)} < 10m\Omega @ V_{GS}=4.5V, I_D=20A$

SYMBOL



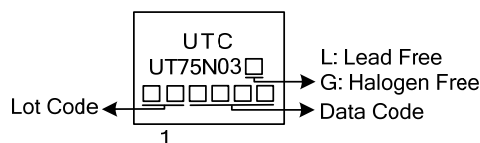
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT75N03L-TA3-T	UT75N03G-TA3-T	TO-220	G	D	S	Tube
UT75N03L-TM3-T	UT75N03G-TM3-T	TO-251	G	D	S	Tube
UT75N03L-TN3-R	UT75N03G-TN3-R	TO-252	G	D	S	Tape Reel

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

<p>UT75N03L-TA3-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TM3: TO-251, TN3: TO-252</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p>
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MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current	I _D	75	A
Pulsed Drain Current (Note 2)	I _{DM}	225	A
Single Pulsed Avalanche Current (Note 3)	I _{AS}	100	A
Single Pulsed Avalanche Energy (Note 3)	E _{AS}	228	mJ
Power Dissipation (T _C = 25°C)	TO-220	75	W
	TO-251/ TO-252	89	
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

Note: 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. Pulse width limited by T_{J(MAX)}

3. L=20μH, I_{AS}=100A, V_{DD}=24V, R_G=25Ω, Starting T_J=25°C

■ THERMAL RESISTANCES CHARACTERISTICS

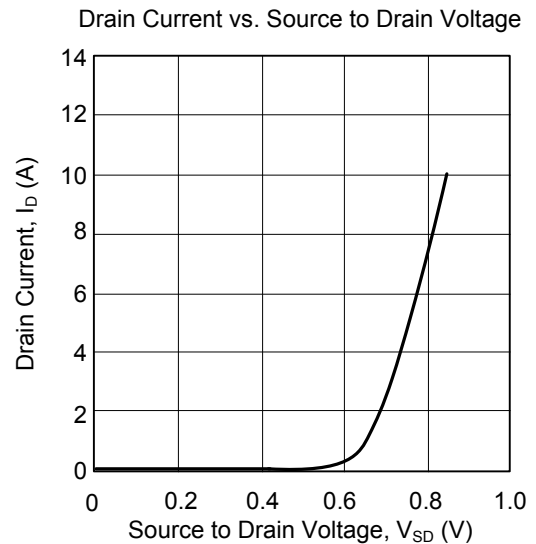
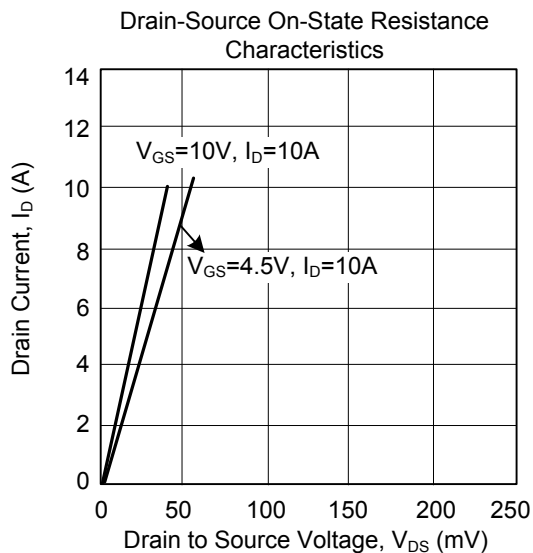
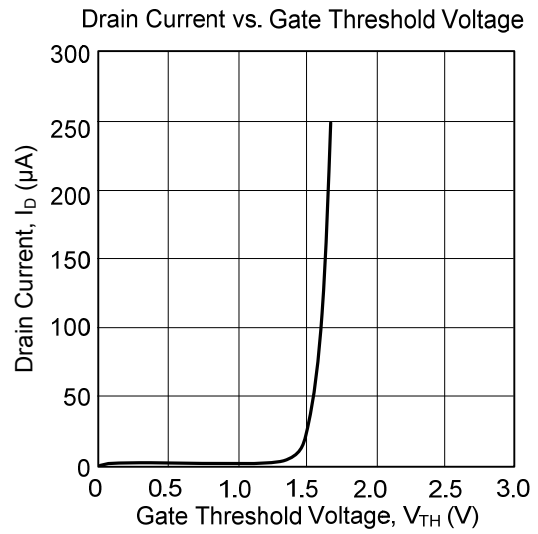
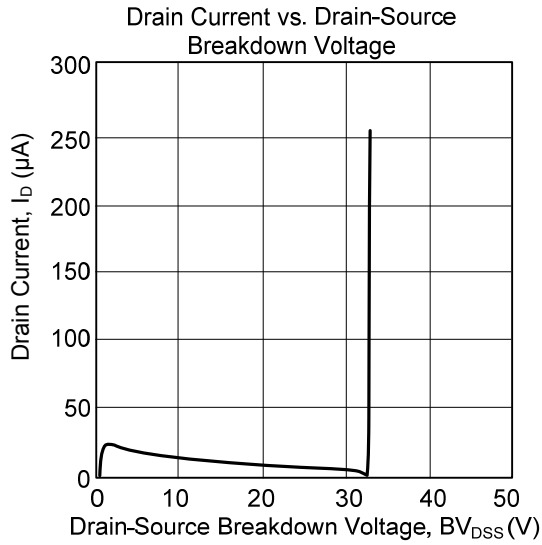
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220	62.5	°C/W
	TO-251/ TO-252	110	
Junction to Case	TO-220	2.0	°C/W
	TO-251/ TO-252	1.4	

■ ELECTRICAL CHARACTERISTICS (T_C=25°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	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	Forward			100	nA
		Reverse	V _{GS} =-20V, V _{DS} =0V		-100	nA
ON CHARACTERISTICS (Note)						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1		3	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =30A		5	7	mΩ
		V _{GS} =4.5V, I _D =20A		7	10	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		3298		pF
Output Capacitance	C _{OSS}			1400		pF
Reverse Transfer Capacitance	C _{RSS}			287		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =15V, I _D =60A, V _{GS} =10V, R _{GEN} =6Ω		20	38	ns
Turn-ON Rise Time	t _R			12	23	ns
Turn-OFF Delay Time	t _{D(OFF)}			113	198	ns
Turn-OFF Fall-Time	t _F			40	78	ns
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =75A		48	55	nC
Gate-Source Charge	Q _{GS}			10		nC
Gate-Drain Charge	Q _{GD}			27		nC
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage(Note)	V _{SD}	V _{GS} =0V, I _S =75A			1.5	V
Maximum Body-Diode Continuous Current	I _S				75	A

Note: Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

TYPICAL CHARACTERISTICS



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