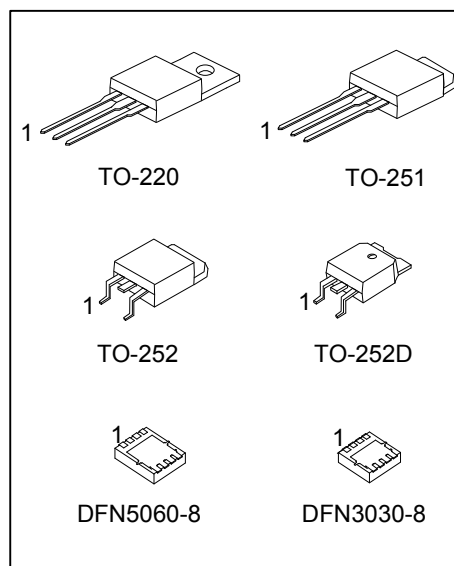
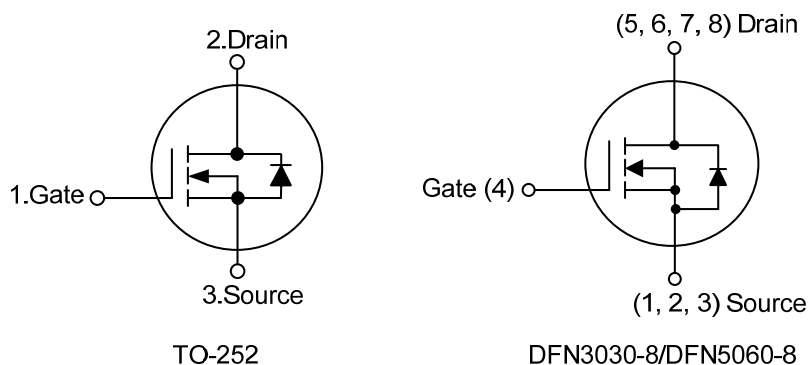


**UT75N03****Power MOSFET****75A, 30V N-CHANNEL
POWER MOSFET****DESCRIPTION**

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

- * $R_{DS(ON)} \leq 7.0 \text{ m}\Omega$ @ $V_{GS}=10\text{V}$, $I_D=37.5\text{A}$
- * $R_{DS(ON)} \leq 10 \text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$, $I_D=37.5\text{A}$
- * 100% Avalanche tested
- * Improved dv/dt capability
- * Fast switching

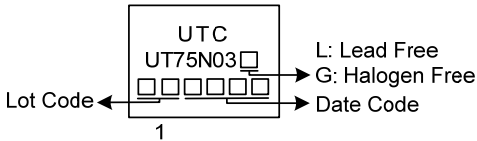
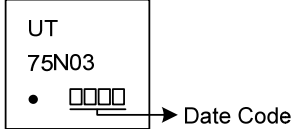
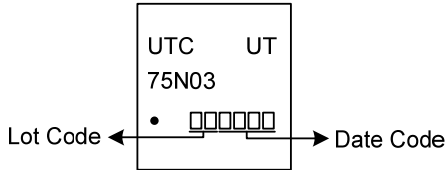
SYMBOL**ORDERING INFORMATION**

Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
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
UT75N03L-TND-R	UT75N03G-TND-R	TO-252D	G	D	S	-	-	-	-	-	Tape Reel
UT75N03L-K08-3030-R	UT75N03G-K08-3030-R	DFN3030-8	S	S	S	G	D	D	D	D	Tape Reel
UT75N03L-K08-5060-R	UT75N03G-K08-5060-R	DFN5060-8	S	S	S	G	D	D	D	D	Tape Reel

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

		(1) T: Tube, R: Tape Reel (2) TA3: TO-220, TM3: TO-251, TN3: TO-252, TND: TO-252D, K08-3030: DFN3030-8, K08-5060: DFN5060-8 (3) G: Halogen Free and Lead Free, L: Lead Free
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■ MARKING

Package	Marking
TO-220 / TO-251 TO-252 / TO-252D	 Lot Code → UTC UT75N03 1 → Date Code L: Lead Free G: Halogen Free
DFN3030-8	 UT 75N03 • → Date Code
DFN5060-8	 Lot Code → UTC UT 75N03 • → Date Code

■ ABSOLUTE MAXIMUM RATINGS ($T_C=25^{\circ}\text{C}$, 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}	150	A
Single Pulsed Avalanche Current (Note 3)		I_{AS}	44.5	A
Single Pulsed Avalanche Energy (Note 3)		E_{AS}	99	mJ
Power Dissipation	TO-220	P_D	60	W
	TO-251/ TO-252		46	W
	TO-252D			
	DFN3030-8		28	W
	DFN5060-8		30	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

Notes: 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. Repetitive Rating : Pulse width limited by maximum junction temperature.

3. $L = 0.1\text{mH}$, $I_{AS} = 44.5\text{ A}$, $V_{DD} = 20\text{V}$, $R_G = 25\ \Omega$, Starting $T_J = 25^{\circ}\text{C}$

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220	θ_{JA}	62.5	$^{\circ}\text{C/W}$
	TO-251/ TO-252		50 (Note)	$^{\circ}\text{C/W}$
	TO-252D			
	DFN3030-8		60 (Note)	$^{\circ}\text{C/W}$
	DFN5060-8		65 (Note)	$^{\circ}\text{C/W}$
Junction to Case	TO-220	θ_{JC}	2.08	$^{\circ}\text{C/W}$
	TO-251/ TO-252		2.7 (Note)	$^{\circ}\text{C/W}$
	TO-252D			
	DFN3030-8		4.46 (Note)	$^{\circ}\text{C/W}$
	DFN5060-8		4.16 (Note)	$^{\circ}\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

■ 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	Forward	I _{GSS}	V _{GS} =20V, V _{DS} =0V			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	1.0		3.0	V
Static Drain-Source On-Resistance		R _{DS(ON)}	V _{GS} =10V, I _D =30A		5.0	7.0	mΩ
			V _{GS} =4.5V, I _D =20A		7.0	10	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C _{ISS}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz		2020		pF
Output Capacitance		C _{OSS}			390		pF
Reverse Transfer Capacitance		C _{RSS}			350		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q _G	V _{DS} =15V, V _{GS} =10V, I _D =75A (Note1, 2)		58		nC
Gate-Source Charge		Q _{GS}			7.2		nC
Gate-Drain Charge		Q _{GD}			20		nC
Turn-ON Delay Time		t _{D(ON)}	V _{DD} =15V, V _{GS} =10V, I _D =75A, R _G =3.0Ω (Note1, 2)		12		ns
Turn-ON Rise Time		t _r			18		ns
Turn-OFF Delay Time		t _{D(OFF)}			42		ns
Turn-OFF Fall-Time		t _f			24		ns
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS							
Maximum Body-Diode Continuous Current		I _S				75	A
Maximum Body-Diode Pulsed Current		I _{SM}				150	A
Drain-Source Diode Forward Voltage (Note 1)		V _{SD}	I _S =75A, V _{GS} =0V			1.5	V
Body Diode Reverse Recovery Time (Note 1)		t _{rr}	I _S =30A, V _{GS} =0V, dI _F /dt=100A/μs		260		ns
Body Diode Reverse Recovery Charge		Q _{rr}			1.1		μC

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

2. Essentially independent of operating temperature.

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