



UT40N03T

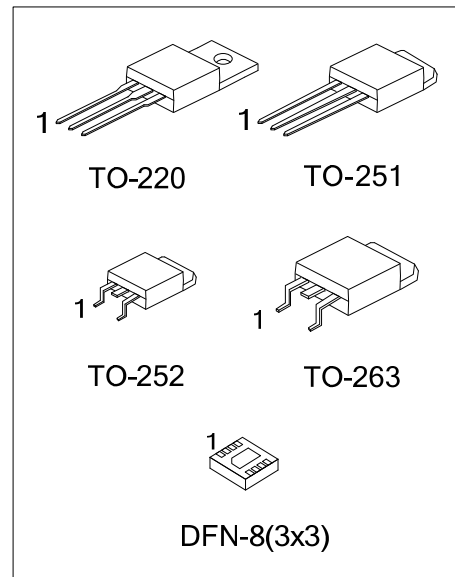
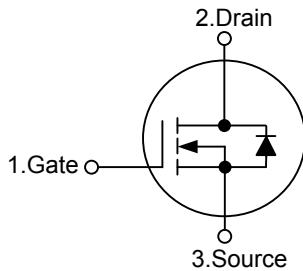
Power MOSFET

30V, 28A N-CHANNEL
ENHANCEMENT MODE
POWER MOSFET

■ FEATURES

- * $R_{DS(ON)} < 25m\Omega @ V_{GS} = 10V$
- * Low capacitance
- * Optimized gate charge
- * Fast switching capability
- * Avalanche energy specified

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment								Packing	
Lead Free	Halogen Free		1	2	3	4	5	6	7	8		
UT40N03TL-TA3-T	UT40N03TG-TA3-T	TO-220	G	D	S	-	-	-	-	-	-	Tube
UT40N03TL-TM3-T	UT40N03TG-TM3-T	TO-251	G	D	S	-	-	-	-	-	-	Tube
UT40N03TL-TN3-R	UT40N03TG-TN3-R	TO-252	G	D	S	-	-	-	-	-	-	Tape Reel
UT40N03TL-TQ2-R	UT40N03TG-TQ2-R	TO-263	G	D	S	-	-	-	-	-	-	Tape Reel
UT40N03TL-TQ2-T	UT40N03TG-TQ2-T	TO-263	G	D	S	-	-	-	-	-	-	Tube
-	UT40N03TG-K08-3030-R	DFN-8(3x3)	S	S	S	G	D	D	D	D	D	Tape Reel

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

<p>UT40N03TL-TN3-R</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) TA3: TO-220, TM3: TO-251, TN3: TO-252, TQ2: TO-263, K08-3030: DFN-8(3x3)</p> <p>(3) L: Lead Free, G: Halogen Free and Lead Free</p>
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■ MARKING

TO-220 / TO-251 / TO-252 / TO-263	DFN-8(3x3)

■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	± 25	V
Continuous Drain Current		I_D	28	A
Pulsed Drain Current		I_{DM}	95	A
Total Power Dissipation	TO-220/TO-263	P_D	31.25	W
	TO-251/ TO-252 DFN-8(3×3)		41	
Junction Temperature		T_J	+150	°C
Storage Temperature		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

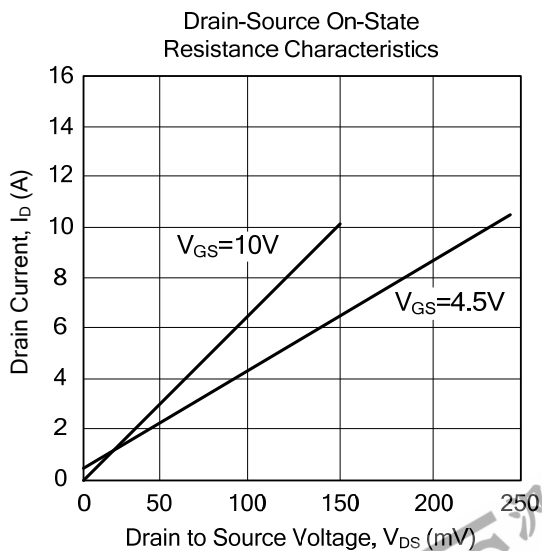
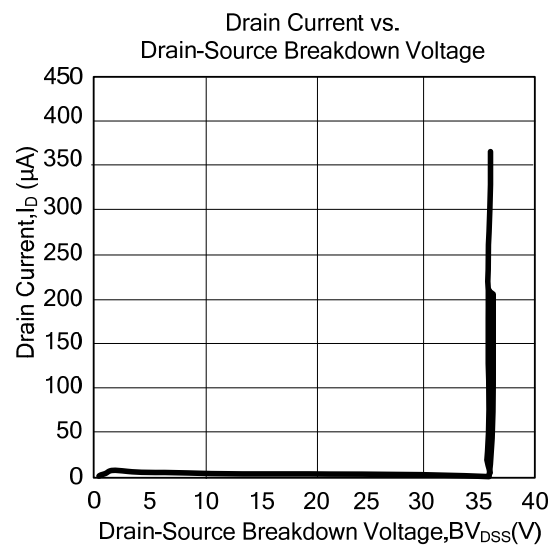
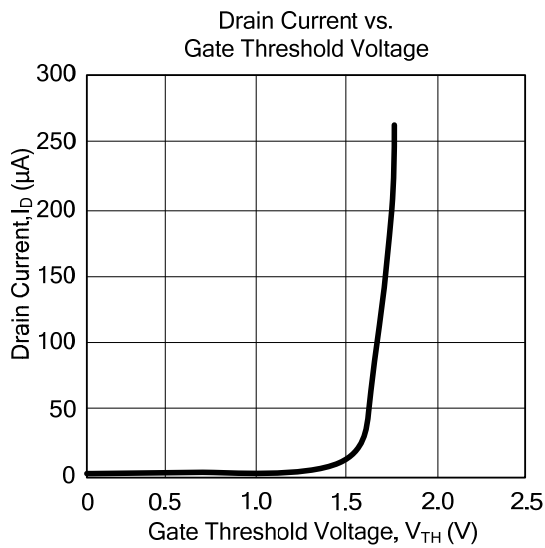
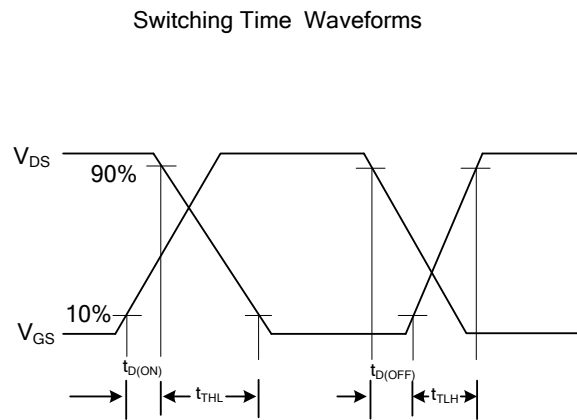
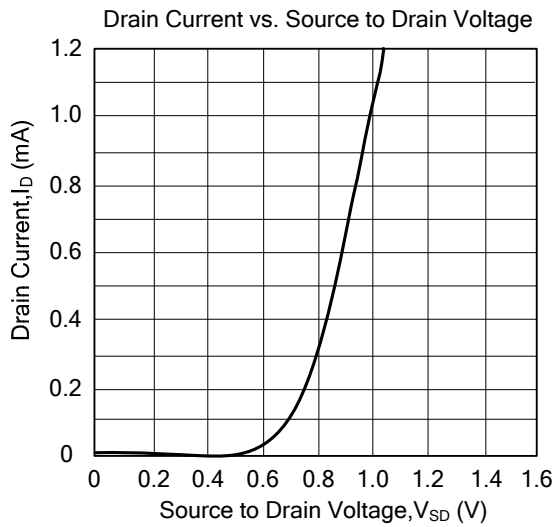
PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-220/TO-263	θ_{JA}	62	°C/W
	TO-251/ TO-252		60	
	DFN-8(3×3)		65	
Junction to Case	TO-220/TO-263	θ_{JC}	4	°C/W
	TO-251/ TO-252		3	
	DFN-8(3×3)			

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0 V, I _D =250μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V, T _J =25°C			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} = ±25 V			±100	nA
Breakdown Voltage Temperature Coefficient	ΔBV _{DSS} /ΔT _J	Reference to 25°C, I _D =1mA		0.032		V/°C
ON CHARACTERISTICS						
Gate-Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250 μA	1		3	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10 V, I _D =18 A			25	mΩ
		V _{GS} =4.5 V, I _D =14 A			45	
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		655		pF
Output Capacitance	C _{OSS}			145		
Reverse Transfer Capacitance	C _{RSS}			95		
SWITCHING PARAMETERS						
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DS} =15V, R _D =0.83Ω, I _D =18 A, R _G =3.3 Ω		6		ns
Turn-ON Rise Time	t _R			62		
Turn-OFF Delay Time	t _{D(OFF)}			16		
Turn-OFF Fall-Time	t _F			4.4		
Total Gate Charge	Q _G	V _{DS} =20V, V _{GS} =4.5V, I _D =18A		8.8		nC
Gate-Source Charge	Q _{GS}			2.5		
Gate-Drain Charge	Q _{GD}			5.8		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =28 A, V _{GS} =0V			1.3	V
Maximum Continuous Drain-Source Diode Forward Current	I _S	V _D =V _G =0V , V _S =1.3V			28	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				95	A

- Notes: 1. Pulse width limited by T_{J(MAX)}.
2. Pulse width ≤ 300us, duty cycle ≤ 2%.

TYPICAL CHARACTERISTICS



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