



UTD36N03

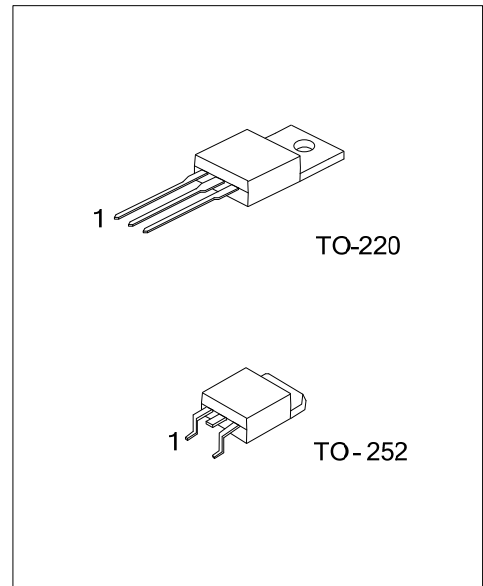
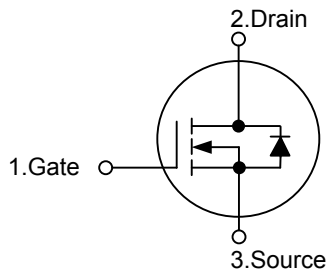
Power MOSFET

N-CHANNEL ENHANCEMENT MODE

FEATURES

- * $R_{DS(ON)} < 17m\Omega @ V_{GS} = 10V$
- * 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	
UTD36N03L-TA3-T	UTD36N03G-TA3-T	TO-220	G	D	S	Tube
UTD36N03L-TN3-T	UTD36N03G-TN3-T	TO-252	G	D	S	Tube
UTD36N03L-TN3-R	UTD36N03G-TN3-R	TO-252	G	D	S	Tape Reel

<p>UTD36N03L-TA3-T</p>	<p>(1) T: Tube, R: Tape Reel</p> <p>(2) TA3: TO-220, TN3: TO-252</p> <p>(3) L: Lead Free, G: Halogen Free</p>
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■ ABSOLUTE MAXIMUM RATINGS (T_J=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	43.4	A
Pulsed Drain Current (Note 1)	I _{DM}	173.6	A
Power Dissipation	TO-220	1.9	W
	TO-252	1.6	W
Junction Temperature	T _J	+175	°C
Storage Temperature	T _{STG}	-55 ~ +175	°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	62.5	°C/W
	TO-252	75	°C/W

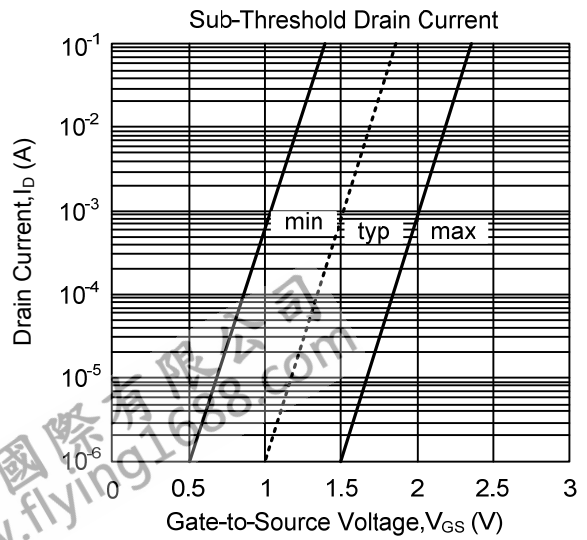
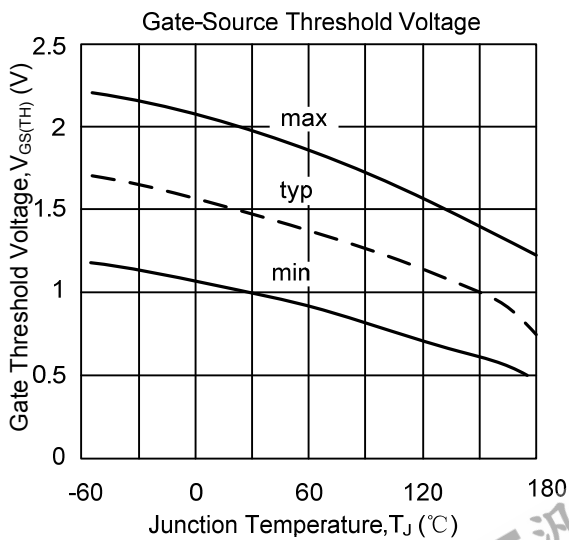
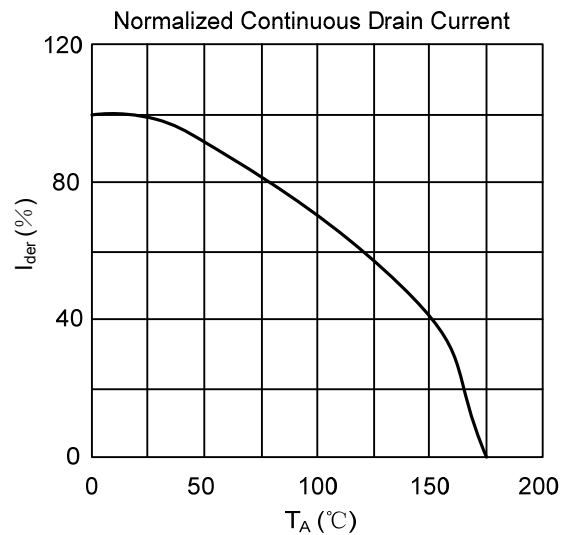
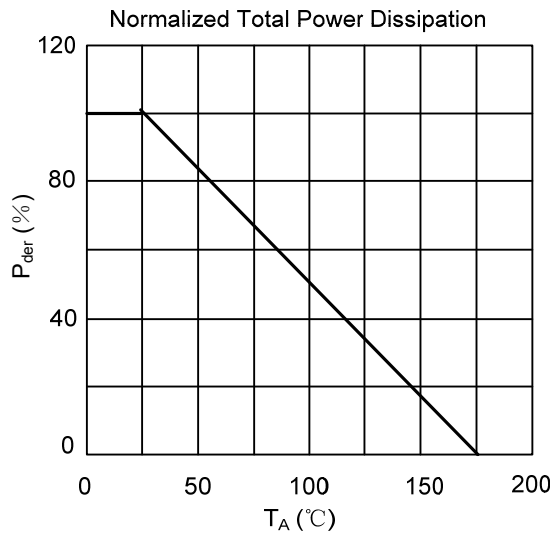
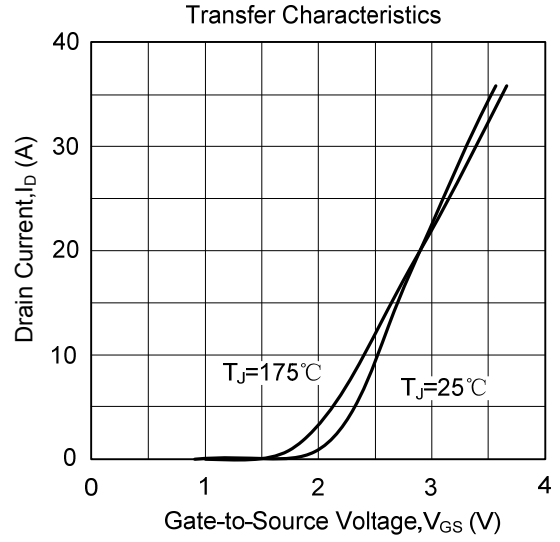
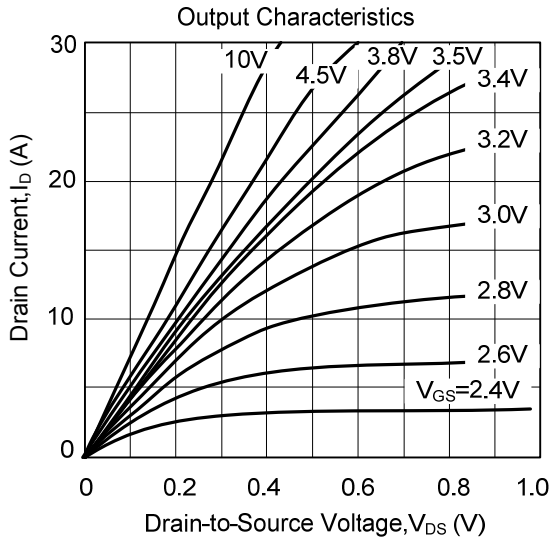
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250 μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V		0.05	1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V		10	100	nA
ON CHARACTERISTICS						
Gate-Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250 μA	1	1.5	2	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =12A		18	22	mΩ
		V _{GS} =10V, I _D =25A		14	17	
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		690		pF
Output Capacitance	C _{OSS}			160		
Reverse Transfer Capacitance	C _{RSS}			110		
SWITCHING PARAMETERS						
Turn-ON Delay Time	t _{D(ON)}	V _{DS} =15V, V _{GS} =10V, R _G =10Ω, R _L =0.6Ω		6		ns
Turn-ON Rise Time	t _R			10		
Turn-OFF Delay Time	t _{D(OFF)}			33		
Turn-OFF Fall-Time	t _F			19		
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =36A		18.5		nC
Gate-Source Charge	Q _{GS}			4.2		
Gate-Drain Charge	Q _{GD}			2.9		
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =25A, V _{GS} =0V		0.97	1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				43.4	A
Maximum Pulsed Drain-Source Diode Forward Current	I _{SM}				173.6	
Reverse Recovery Time	t _{RR}	V _R =15V, I _F =I _S , dI _F /dt=100A/μs		15	18	ns
Reverse Recovery Charge	Q _{RR}				2	3

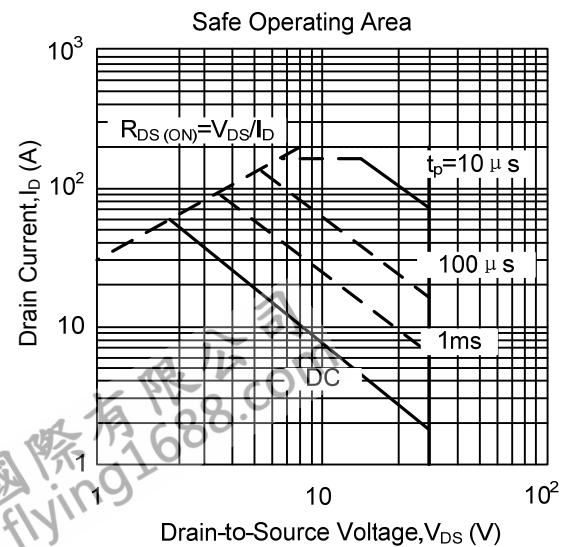
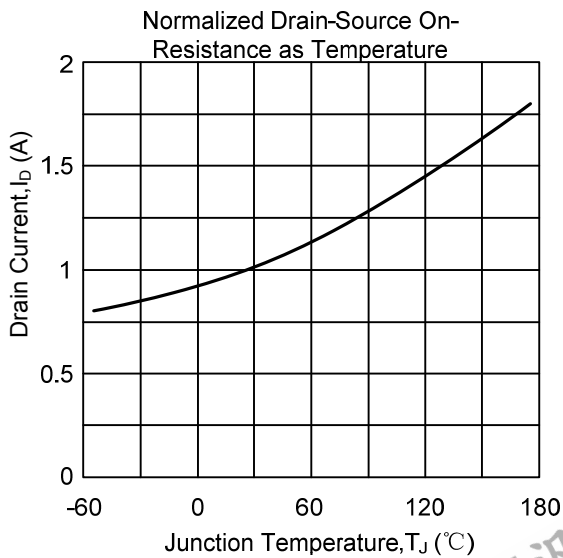
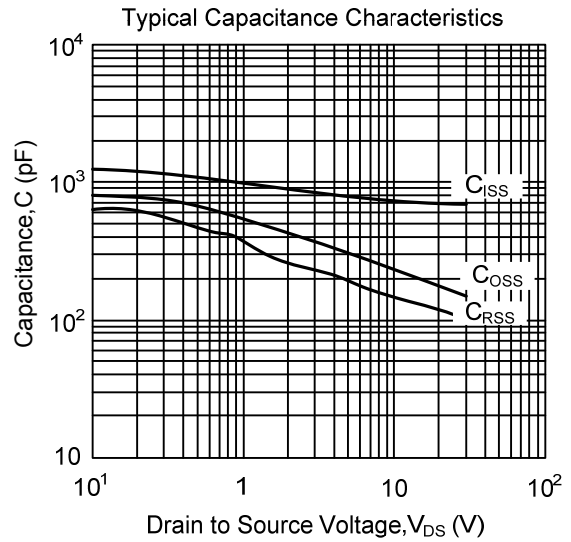
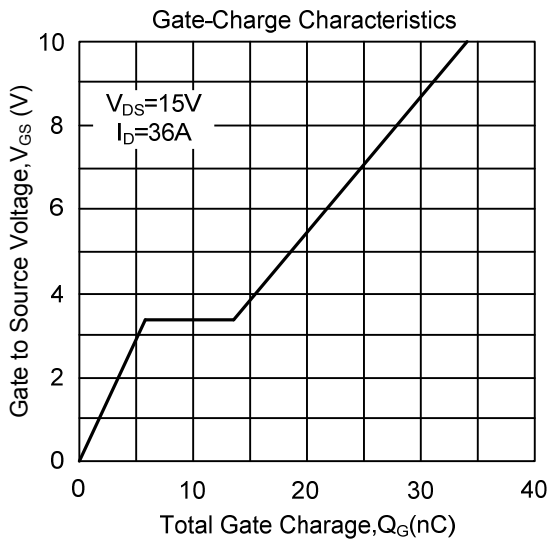
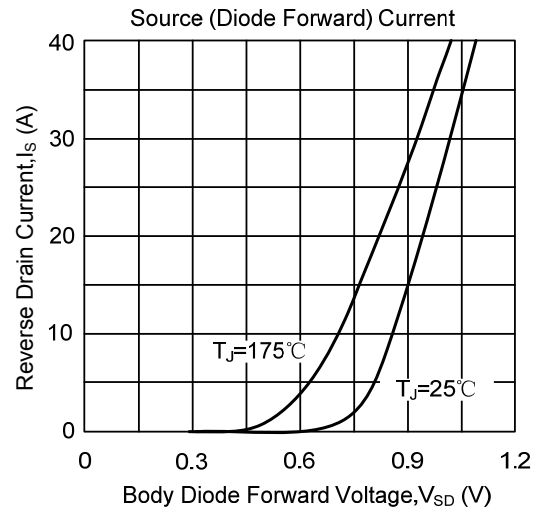
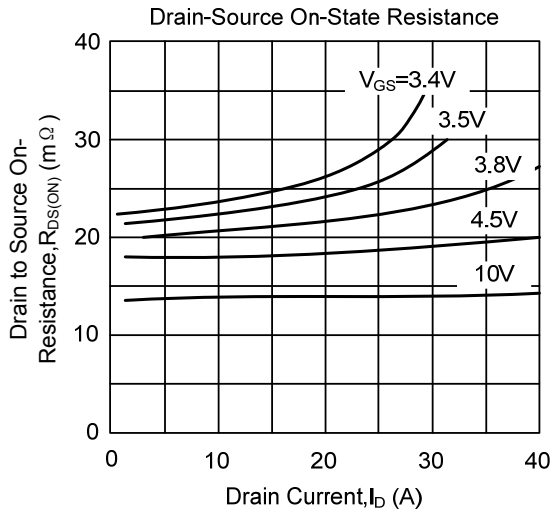
Notes: 1. Pulse width limited by T_{J(MAX)}

2. Pulse width ≤300us, duty cycle ≤2%.

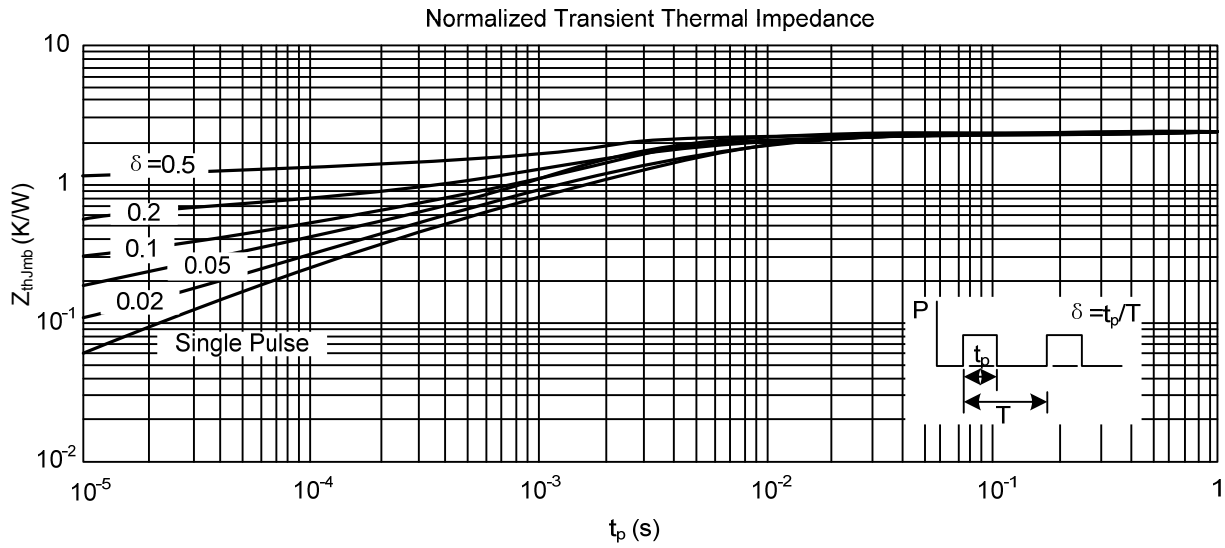
TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



■ TYPICAL CHARACTERISTICS(Cont.)



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