



## UT30P03

Preliminary

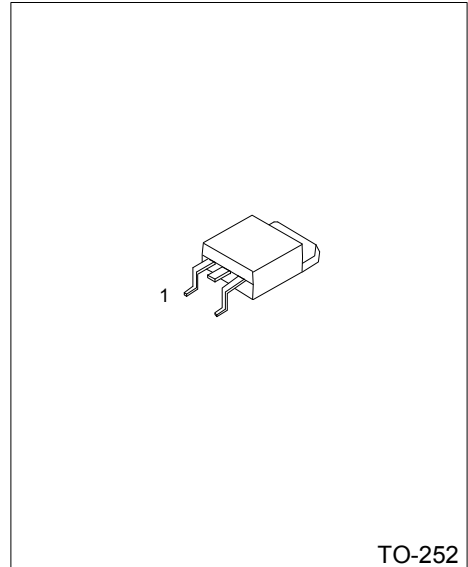
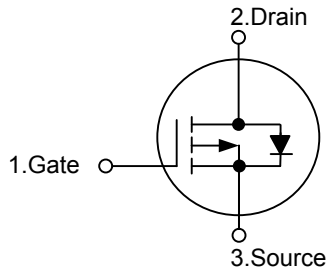
Power MOSFET

### P-CHANNEL ENHANCEMENT MODE

#### ■ FEATURES

- \*  $R_{DS(ON)} = 40m\Omega$  @  $V_{GS} = -10V$
- \* Low Capacitance
- \* Optimized gate charge
- \* Fast switching capability
- \* Avalanche energy specified

#### ■ SYMBOL



TO-252

#### ■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT30P03L-TN3-R	UT30P03G-TN3-R	TO-252	G	D	S	Tape Reel

UT30P03G-TN3-R		(1)Packing Type	(1) R: Tape Reel
		(2)Package Type	(2) TN3: TO-252
		(3)Halogen Free	(3) G: Halogen Free,L: Lead Free

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	$V_{DS}$	-30	V
Gate-Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	-26	A
Power Dissipation	$P_D$	50	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	$\theta_{JA}$	50	°C/W
Junction to Case	$\theta_{JC}$	3	°C/W

■ ELECTRICAL CHARACTERISTICS (T<sub>J</sub> =25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV <sub>DSS</sub>	V <sub>GS</sub> =0V, I <sub>D</sub> =-250 μA	-30			V
Drain-Source Leakage Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
Gate-Source Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V <sub>GS(TH)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250 μA	-1		-3	V
Static Drain-Source On-State Resistance (Note)	R <sub>DS(ON)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-10A		30	40	mΩ
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A		40	60	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C <sub>ISS</sub>	V <sub>DS</sub> =-25V, V <sub>GS</sub> =0V, f=1.0MHz		700		pF
Output Capacitance	C <sub>OSS</sub>			130		pF
Reverse Transfer Capacitance	C <sub>RSS</sub>			120		pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	t <sub>D(ON)</sub>	V <sub>DS</sub> =-15V, I <sub>D</sub> =1A, R <sub>L</sub> = 15Ω, V <sub>GS</sub> =-10V, R <sub>G</sub> =3.3Ω		25		ns
Turn-On Rise Time	t <sub>R</sub>			50		ns
Turn-Off Delay Time	t <sub>D(OFF)</sub>			380		ns
Turn-Off Fall Time	t <sub>F</sub>			180		ns
Total Gate Charge	Q <sub>G</sub>	V <sub>DS</sub> = -24V, I <sub>D</sub> = -30A, V <sub>GS</sub> = -4.5V		100		nC
Gate-Source Charge	Q <sub>GS</sub>			15		nC
Gate-Drain Charge	Q <sub>GD</sub>			10		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V <sub>SD</sub>	V <sub>GS</sub> = 0V, I <sub>S</sub> =-10A			-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I <sub>S</sub>				-26	A

Note: Pulse Test: Pulse width≤300μs, Duty cycle≤2%

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