



UT30P03

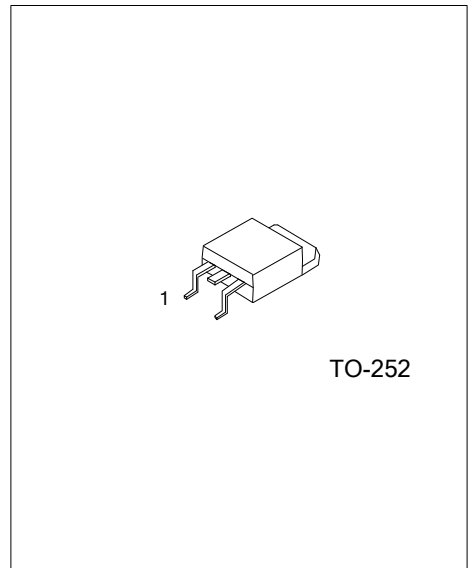
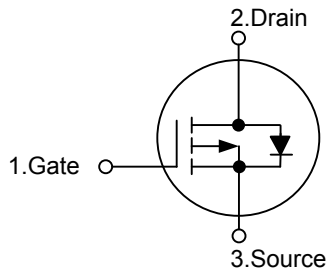
Power MOSFET

P-CHANNEL ENHANCEMENT MODE

■ FEATURES

- * $R_{DS(ON)} < 40m\Omega @ V_{GS}=-10V, I_D=-10A$
 $R_{DS(ON)} < 60m\Omega @ V_{GS}=-4.5V, I_D=-10A$
- * 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	
UT30P03L-TN3-T	UT30P03G-TN3-T	TO-252	G	D	S	Tube
UT30P03L-TN3-R	UT30P03G-TN3-R	TO-252	G	D	S	Tape Reel

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

■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, 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	-30	A
Power Dissipation	P_D	50	W
Junction Temperature	T_J	+175	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 ~ +175	$^{\circ}\text{C}$

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

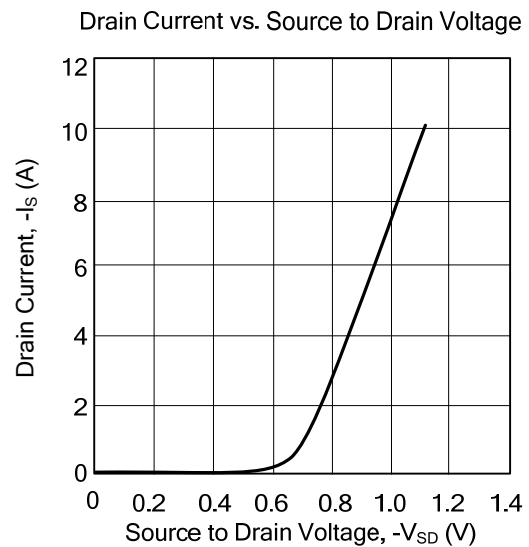
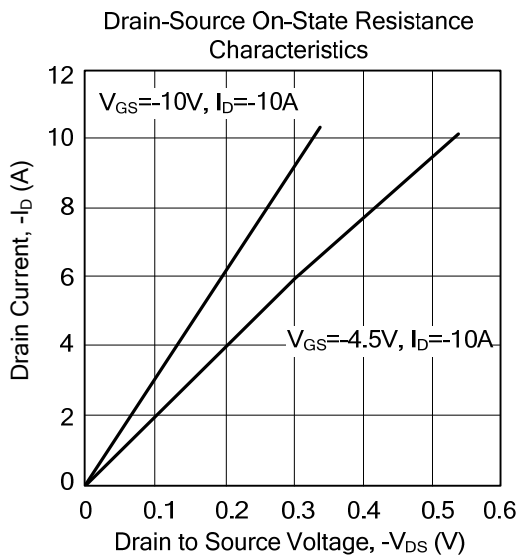
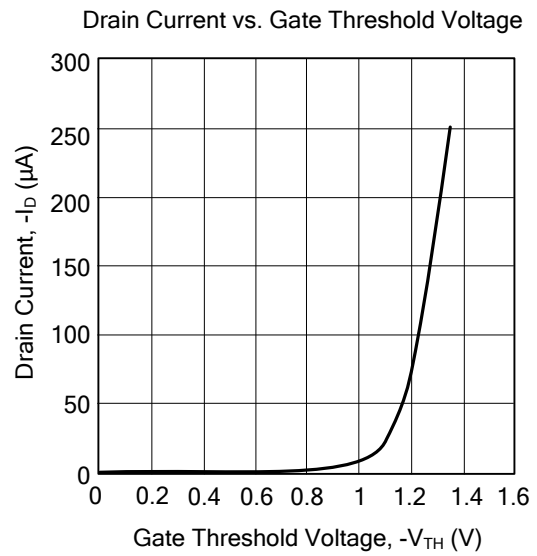
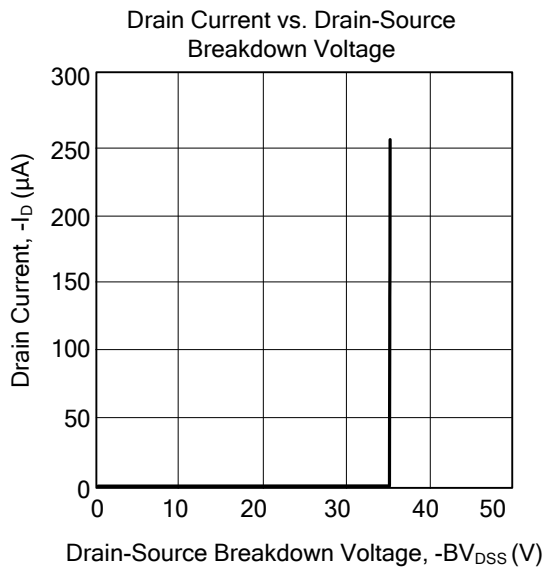
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	50	$^{\circ}\text{C}/\text{W}$
Junction to Case	θ_{JC}	3	$^{\circ}\text{C}/\text{W}$

■ ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0\text{V}, I_D=-250\ \mu\text{A}$	-30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-30\text{V}, V_{GS}=0\text{V}$			-1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20\text{V}, V_{DS}=0\text{V}$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=-250\ \mu\text{A}$	-1		-3	V
Static Drain-Source On-State Resistance (Note)	$R_{DS(ON)}$	$V_{GS}=-10\text{V}, I_D=-10\text{A}$		30	40	m Ω
		$V_{GS}=-4.5\text{V}, I_D=-10\text{A}$		40	60	m Ω
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS}=-25\text{V}, V_{GS}=0\text{V}, f=1.0\text{MHz}$		700		pF
Output Capacitance	C_{OSS}			130		pF
Reverse Transfer Capacitance	C_{RSS}			120		pF
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$t_{D(ON)}$	$V_{DS}=-15\text{V}, I_D=-1\text{A}, R_L=15\ \Omega,$ $V_{GS}=-10\text{V}, R_G=3.3\ \Omega$		25		ns
Turn-On Rise Time	t_R			50		ns
Turn-Off Delay Time	$t_{D(OFF)}$			380		ns
Turn-Off Fall Time	t_F			180		ns
Total Gate Charge	Q_G	$V_{DS}=-24\text{V}, I_D=-30\text{A}, V_{GS}=-4.5\text{V}$		100		nC
Gate-Source Charge	Q_{GS}			15		nC
Gate-Drain Charge	Q_{GD}			10		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}, I_S=-10\text{A}$			-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I_S				-30	A

Note: Pulse Test: Pulse width $\leq 300\ \mu\text{s}$, Duty cycle $\leq 2\%$

■ TYPICAL CHARACTERISTICS



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