



## UTT36P03

Preliminary

Power MOSFET

### -30V, -36A P-CHANNEL POWER MOSFET

#### DESCRIPTION

The UTC **UTT36P03** is a P-channel Power MOSFET, using UTC's advanced technology to provide the customers with high switching speed and a minimum on-state resistance, and it can also withstand high energy in the avalanche.

The UTC **UTT36P03** is suitable for low voltage ,high speed switching applications

#### FEATURES

\*  $R_{DS(ON)} < 38m\Omega$  @  $V_{GS} = -10V$ ,  $I_D = -36A$

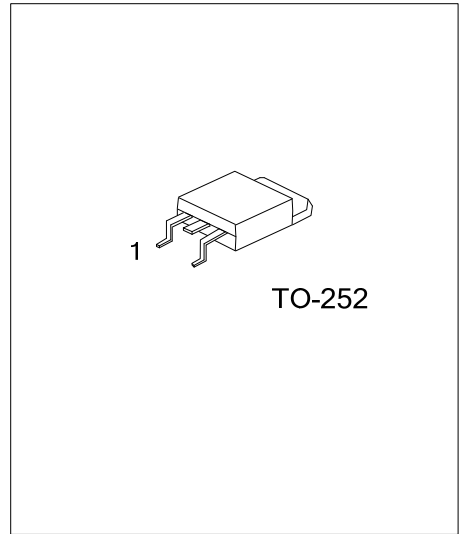
\* High Switching Speed

#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UTT36P03L-TN3-R	UTT36P03G-TN3-R	TO-252	G	D	S	Tape Reel

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

UTT36P03L-TN3-R		(1) Packing Type	(1) R: Tape Reel
		(2) Package Type	(2) TN3: TO-252
		(3) Lead Free	(3) G: Halogen Free, L: Lead Free



## ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		$V_{DSS}$	-30	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current	Continuous	$I_D$	-36	A
	Pulsed	$I_{DM}$	-144	A
Avalanche Current		$I_{AR}$	-36	A
Avalanche Energy	Single Pulsed	$E_{AS}$	36	mJ
Power Dissipation		$P_D$	1.2	W
Junction Temperature		$T_J$	+150	°C
Storage Temperature Range		$T_{STG}$	-55~+150	°C

Note: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

2. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

3.  $T_J=25^\circ\text{C}$ ,  $V_{DD}=-25\text{V}$ ,  $L=0.1\text{mH}$ ,  $R_G=25\Omega$ ,  $I_{AS}=-36\text{A}$ .

## ■ ELECTRICAL CHARACTERISTICS

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV <sub>DSS</sub>	I <sub>D</sub> =-250μA, V <sub>GS</sub> =0V	-30			V
Drain-Source Leakage Current		I <sub>DSS</sub>	V <sub>DS</sub> =-30V			-1	μA
Gate-Source Leakage Current	Forward	I <sub>GSS</sub>	V <sub>GS</sub> =+20V, V <sub>DS</sub> =0V			+100	nA
	Reverse		V <sub>GS</sub> =-20V, V <sub>DS</sub> =0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		V <sub>GS(TH)</sub>	I <sub>D</sub> =-250μA	-1		-3	V
Static Drain-Source On-State Resistance		R <sub>DS(ON)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-36A			38	mΩ
			V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-10A			58	mΩ
DYNAMIC PARAMETERS							
Input Capacitance		C <sub>ISS</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-25V, f=1MHz		3200		pF
Output Capacitance		C <sub>OSS</sub>			350		pF
Reverse Transfer Capacitance		C <sub>RSS</sub>			205		pF
SWITCHING PARAMETERS							
Total Gate Charge		Q <sub>G</sub>	V <sub>GS</sub> =-10V, V <sub>DD</sub> =-25V, I <sub>D</sub> =-36A		17		nC
Gate to Source Charge		Q <sub>GS</sub>			5		nC
Gate to Drain Charge		Q <sub>GD</sub>			3		nC
Turn-ON Delay Time		t <sub>D(ON)</sub>	V <sub>DD</sub> =-25V, I <sub>D</sub> =-36A R <sub>G</sub> =25Ω, V <sub>GS</sub> =-10V		6		ns
Rise Time		t <sub>R</sub>			16		ns
Turn-OFF Delay Time		t <sub>D(OFF)</sub>			26		ns
Fall-Time		t <sub>F</sub>			10		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS							
Maximum Body-Diode Continuous Current		I <sub>S</sub>				-36	A
Maximum Body-Diode Pulsed Current		I <sub>SM</sub>				-144	A
Drain-Source Diode Forward Voltage		V <sub>SD</sub>	I <sub>S</sub> =-36A			-1.2	V

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