



UT3P06

Preliminary

Power MOSFET

3A, 60V (D-S) P-CHANNEL POWER MOSFET

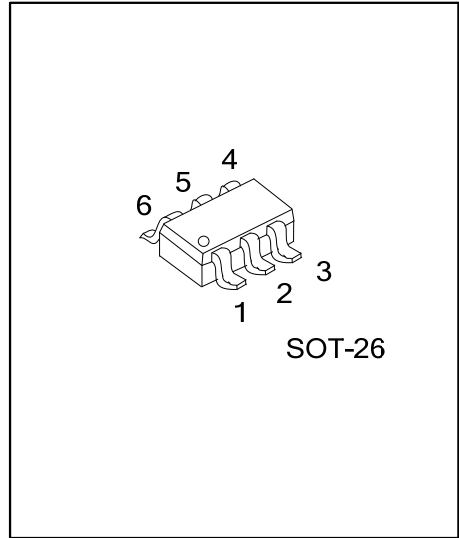
DESCRIPTION

The UTC **UT3P06** is a P-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$ and low gate charge.

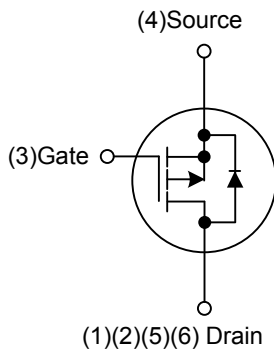
This UTC **UT3P06** can be operated with -4.5V low gate voltage.

FEATURES

- * $R_{DS(ON)}=0.19\Omega @ V_{GS}=-10V$,
 $R_{DS(ON)}=0.265\Omega @ V_{GS}=-4.5V$
- * Low gate charge (Typically 7nC)



SYMBOL



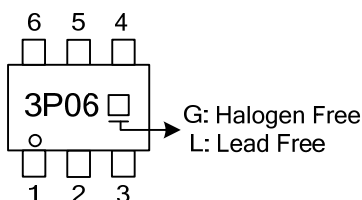
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1, 2, 5, 6	3	4	
UT3P06L-AG6-R	UT3P06G-AG6-R	SOT-26	D	G	S	Tape Reel

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

<p>UT3P06L-AG6-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) AG6: SOT-26</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DSS}	-60	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current	Continuous	I_D	-3	A
	Pulsed	I_{DM}	-10	A
Avalanche Current (L=0.1mH)		I_{AR}	-7	A
Power Dissipation (Note 1, 2)		P_D	3.5	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55~+150	$^{\circ}\text{C}$

Notes: 1. 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.

2. Surface Mounted on FR4 Board.

3. $t \leq 5$ sec

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 1,2)	θ_{JA}	62.5	$^{\circ}\text{C}/\text{W}$
Junction to Case	θ_{JC}	35	$^{\circ}\text{C}/\text{W}$

■ 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}	$I_D=-250\mu\text{A}$, $V_{DS}=0\text{V}$	-60			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=-48\text{V}$, $V_{GS}=0\text{V}$			-1	μA
		$V_{DS}=-48\text{V}$, $V_{GS}=0\text{V}$, $T_J=150^{\circ}\text{C}$			-50	
Gate- Source Leakage Current	Forward	I_{GSS}			+100	nA
	Reverse					
					-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}$, $I_D=-250\mu\text{A}$	-1			V
Static Drain-Source On-State Resistance (Note 1)	$R_{DS(ON)}$	$V_{GS}=-10\text{V}$, $I_D=-3\text{A}$		190	220	m Ω
		$V_{GS}=-4.5\text{V}$, $I_D=-1.9\text{A}$		265	310	
On State Drain Current (Note 1)	$I_{D(ON)}$	$V_{GS}=-10\text{V}$, $V_{DS}=-5\text{V}$	-10			A
SWITCHING PARAMETERS (Note 2)						
Total Gate Charge	Q_G	$V_{GS}=-10\text{V}$, $V_{DS}=-30\text{V}$, $I_D=-3\text{A}$		7	14	nC
Gate to Source Charge	Q_{GS}			1.6		nC
Gate to Drain Charge	Q_{GD}			1.2		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=-30\text{V}$, $V_{GEN}=-10\text{V}$, $I_D=-1\text{A}$, $R_L=30\Omega$, $R_G=6\Omega$		8	16	ns
Rise Time	t_R			12	24	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			23	45	ns
Fall-Time	t_F			12	25	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS (Note 2)						
Maximum Body-Diode Continuous Current	I_S				-1.7	A
Maximum Body-Diode Pulsed Current	I_{SM}				-10	A
Drain-Source Diode Forward Voltage	V_{SD}	$I_S=-3\text{A}$, $V_{GS}=0\text{V}$ (Note 1)		-0.8	-1.2	V

Notes: 1. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

2. Guaranteed by design, not subject to production testing.

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