



UT3P06

Power MOSFET

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

DESCRIPTION

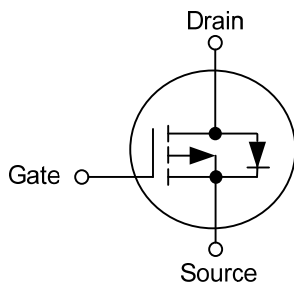
The UTC **UT3P06** is a P-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$ and low gate charge.

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

FEATURES

- * $R_{DS(ON)} < 220m\Omega$ @ $V_{GS}=-10V, I_D=-3A$
- * $R_{DS(ON)} < 310m\Omega$ @ $V_{GS}=-4.5V, I_D=-1.9A$
- * Low gate charge (Typically 7nC)

SYMBOL



ORDERING INFORMATION

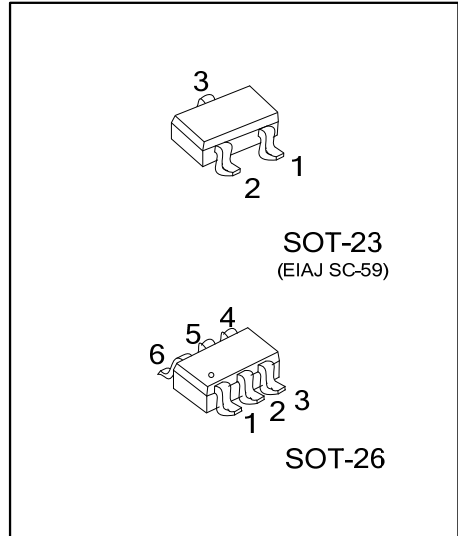
Ordering Number	Package	Pin Assignment						Packing
		1	2	3	4	5	6	
UT3P06G-AE3-R	SOT-23	S	G	D	-	-	-	Tape Reel
UT3P06G-AG6-R	SOT-26	D	D	G	S	D	D	Tape Reel

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

<p>UT3P06G-AE3-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AE3: SOT-23, AG6: SOT-26 (3) L: Lead Free, G: Halogen Free and Lead Free
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MARKING

SOT-23	SOT-26



■ 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)	SOT-23	P_D	0.35	W
	SOT-26		1.1	
Junction Temperature	T_J	+150	$^{\circ}\text{C}$	
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$	

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT	
Junction to Ambient (Note 1,2)	SOT-23	θ_{JA}	350	$^{\circ}\text{C/W}$
	SOT-26		110	

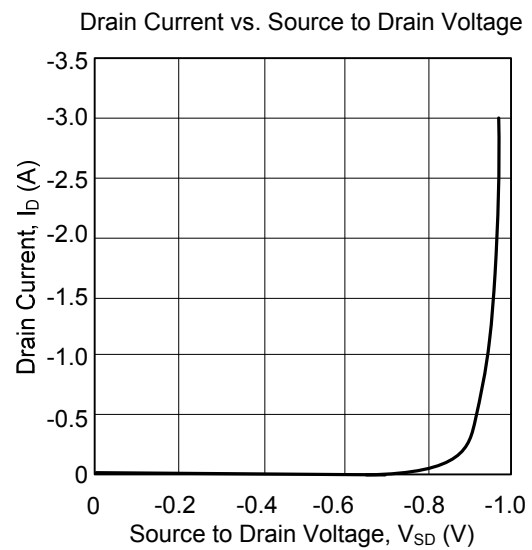
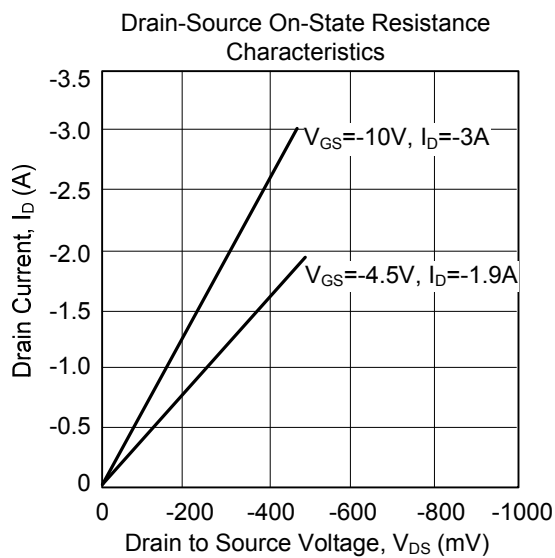
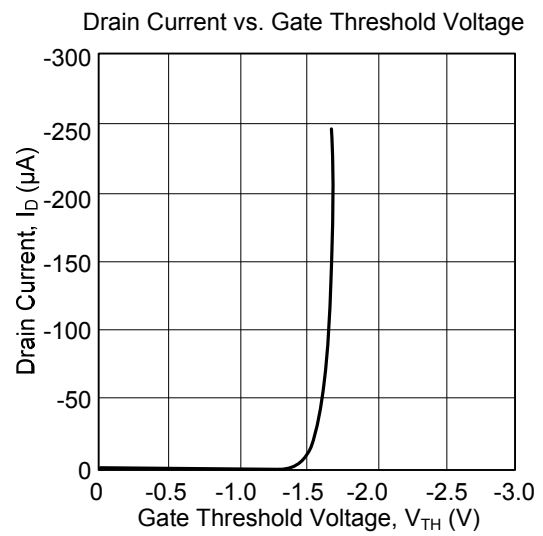
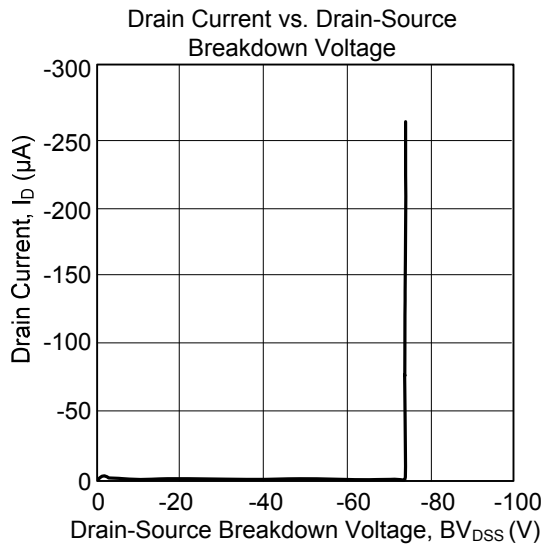
- Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.
 2. Surface Mounted on FR4 Board.
 3. $t \leq 5$ sec

■ 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}	$V_{GS}=+20\text{V}$, $V_{DS}=0\text{V}$			+100	nA
	Reverse			$V_{GS}=-20\text{V}$, $V_{DS}=0\text{V}$			
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.

TYPICAL CHARACTERISTICS



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