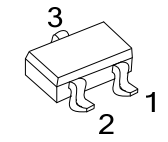
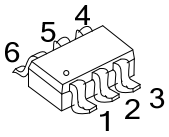
3A, 60V (D-S) P-CHANNEL POWER MOSFET



SOT-23
(EIAJ SC-59)



SOT-26

■ DESCRIPTION

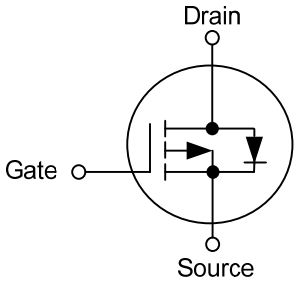
The UTC **UT3P06** is a P-channel enhancement power MOSFET using UTC's advanced technology to provide the customers with perfect $R_{DS(ON)}$ and low gate charge.

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

■ FEATURES

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

■ SYMBOL



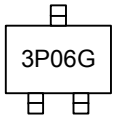
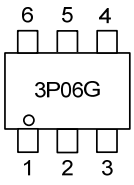
■ ORDERING INFORMATION

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

UT3P06G-AE3-R (1)Packing Type	(1) R: Tape Reel
(2)Package Type	(2) AE3: SOT-23, AG6: SOT-26
(3)Green Package	(3) L: Lead Free, G: Halogen Free and Lead Free

■ MARKING

SOT-23	SOT-26
	

■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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	°C
Storage Temperature		T_{STG}	-55~+150	°C

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 1,2)	SOT-23	θ_{JA}	350	°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 ≤ 5 sec

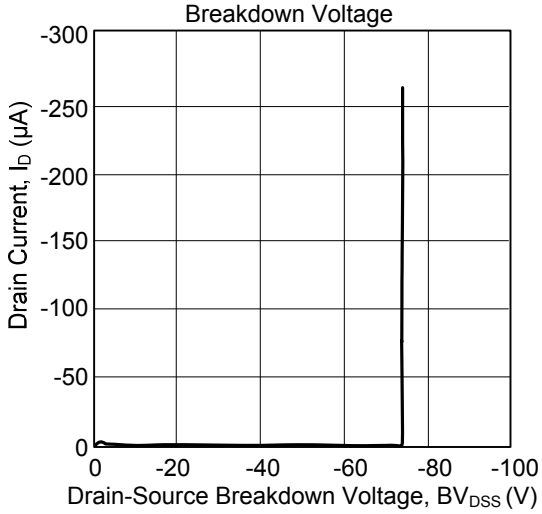
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Drain-Source Breakdown Voltage		BV_{DSS}	I_D=-250μA, V_{DS}=0V	-60			V
Drain-Source Leakage Current		I_{DSS}	V_{DS}=-48V, V_{GS}=0V			-1	μA
			V_{DS}=-48V, V_{GS}=0V , T_J=150°C			-50	
Gate- Source Leakage Current	Forward	I_{GSS}	V_{GS}=+20V, V_{DS}=0V			+100	nA
	Reverse		V_{GS}=-20V, V_{DS}=0V			-100	nA
ON CHARACTERISTICS							
Gate Threshold Voltage		$V_{GS(TH)}$	V_{DS}=V_{GS}, I_D=-250μA	-1			V
Static Drain-Source On-State Resistance (Note 1)		$R_{DS(ON)}$	V_{GS}=-10V, I_D=-3A		190	220	mΩ
			V_{GS}=-4.5V, I_D=-1.9A		265	310	
On State Drain Current (Note 1)		$I_{D(ON)}$	V_{GS}=-10V, V_{DS}=-5V	-10			A
SWITCHING PARAMETERS (Note 2)							
Total Gate Charge		Q_G	V_{GS}=-10V, V_{DS}=-30V, I_D=-3A		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}=-30V, V_{GEN}=-10V, I_D=-1A, R_L=30 Ω , R_G=6Ω		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=-3A, V_{GS}=0V (Note 1)		-0.8	-1.2	V

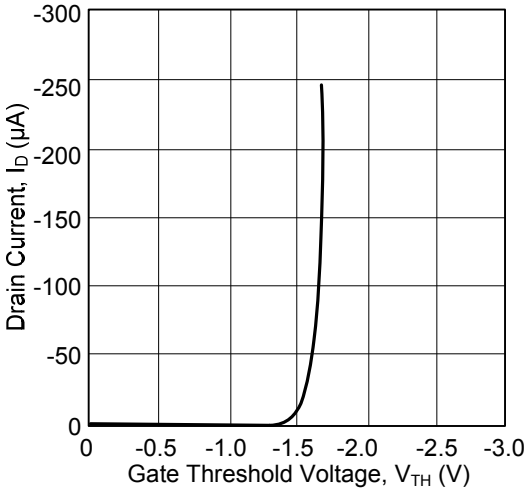
Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.

■ TYPICAL CHARACTERISTICS

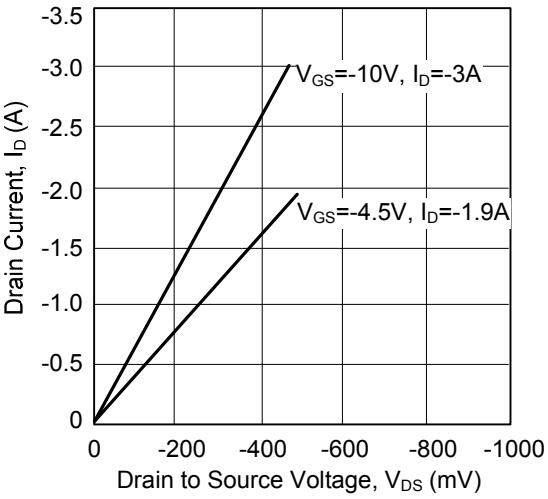
Drain Current vs. Drain-Source Breakdown Voltage



Drain Current vs. Gate Threshold Voltage



Drain-Source On-State Resistance Characteristics



Drain Current vs. Source to Drain Voltage