



UT2P06

Power MOSFET

-2A, 60V (D-S) P-CHANNEL POWER MOSFET

DESCRIPTION

The UTC **UT2P06** 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 **UT2P06** can be operated with -4.5V low gate voltage.

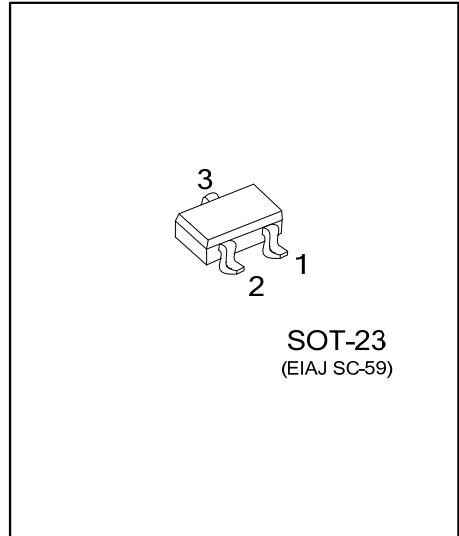
FEATURES

* $R_{DS(ON)} < 0.4\Omega$ @ $V_{GS} = -10V, I_D = -0.9A$

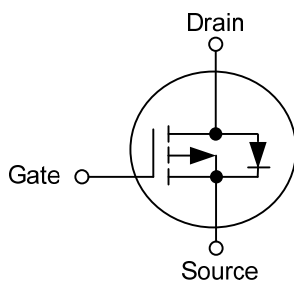
$R_{DS(ON)} < 0.6\Omega$ @ $V_{GS} = -4.5V, I_D = -0.8A$

* High switching speed

* Low gate charge (Typ.=5.1 nC)



SYMBOL



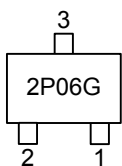
ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UT2P06G-AE3-R	SOT-23	S	G	D	Tape Reel

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

	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free</p>
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MARKING



■ 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	-2
	Pulsed	I _{DM}	-6.03
Avalanche Current (L=0.1mH)	I _{AR}	-7	A
Power Dissipation (Note 1, 2)	P _D	0.3	W
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55~+150	°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 ≤ 5 sec

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	320	°C/W

Notes: Pulse width ≤ 300μs; duty cycle ≤ 2%. The pulse current is limited by the maximum junction temperature.

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

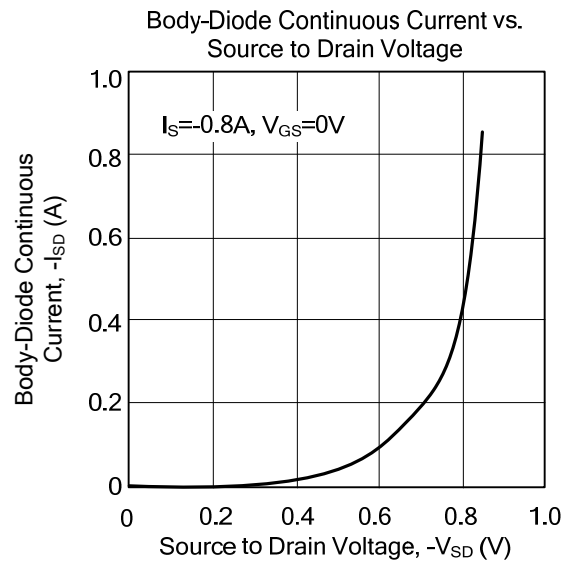
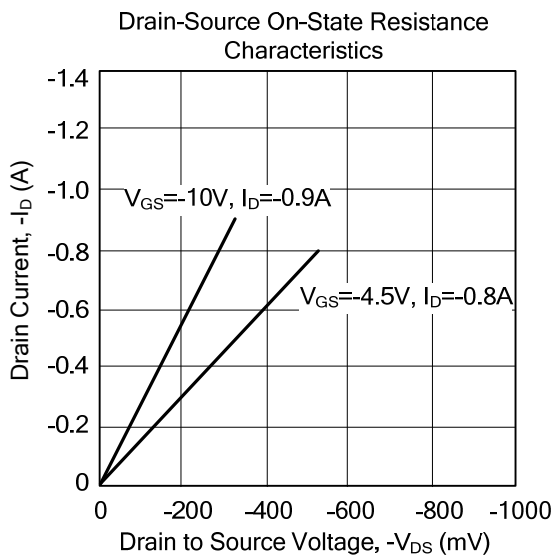
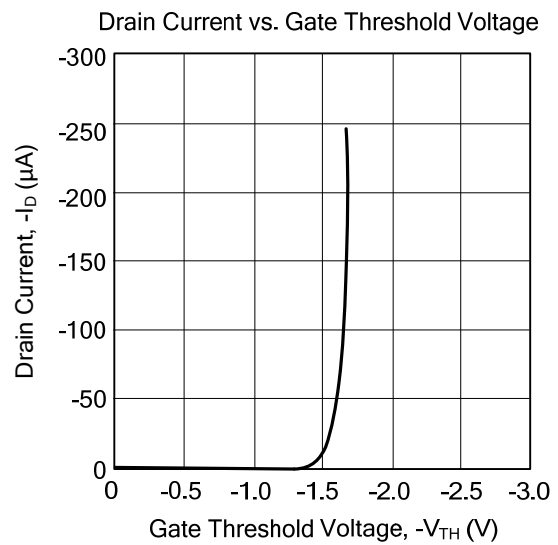
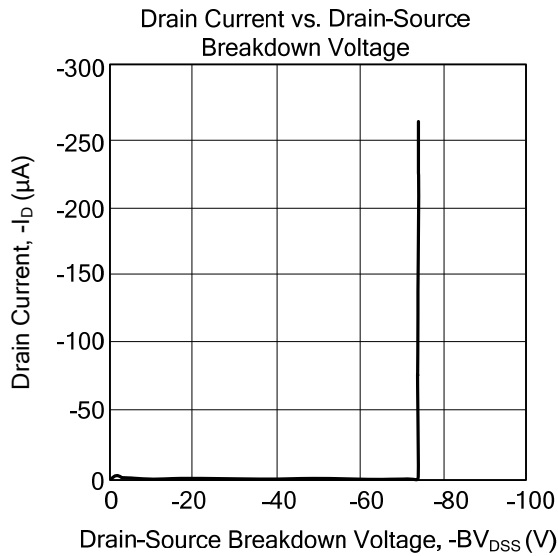
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =-250μA, V _{DS} =0V	-60			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-60V, V _{GS} =0V			-0.5	μA
Gate- Source Leakage Current	I _{GSS}	Forward			+100	nA
		Reverse			-100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-1		-3	V
Static Drain-Source On-State Resistance (Note 1)	R _{DS(ON)}	V _{GS} = -10V, I _D = -0.9A			0.4	Ω
		V _{GS} = -4.5V, I _D = -0.8A			0.6	
DYNAMIC PARAMETERS						
Input Capacitance (Note 3)	C _{ISS}	V _{GS} =0V, V _{DS} =-25V, f=1.0MHz		141		pF
Output Capacitance (Note 3)	C _{OSS}			13.1		pF
Reverse Transfer Capacitance (Note 3)	C _{RSS}			10.8		pF
SWITCHING PARAMETERS (Note 2)						
Total Gate Charge (Note 3)	Q _G	V _{GS} =-10V, V _{DS} =-30V, I _D =-0.9A		5.1		nC
Gate to Source Charge (Note 3)	Q _{GS}			0.7		nC
Gate to Drain Charge (Note 3)	Q _{GD}			0.7		nC
Turn-ON Delay Time (Note 2, 3)	t _{D(ON)}	V _{DD} =-30V, I _D =-1A, R _G ≈6Ω, V _{GS} =-10V		1.6		ns
Rise Time (Note 2, 3)	t _R			2.3		ns
Turn-OFF Delay Time (Note 2, 3)	t _{D(OFF)}			13		ns
Fall-Time (Note 2, 3)	t _F			5.8		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS (Note 2)						
Maximum Body-Diode Continuous Current	I _S	T _A =25°C (Note 2)			-1.42	A
Maximum Body-Diode Pulsed Current	I _{SM}	T _A =25°C (Note 3)			-6.03	A
Drain-Source Diode Forward Voltage (Note 1)	V _{SD}	I _S =-0.8A, V _{GS} =0V	-0.85	-0.95		V

Notes: 1. Measured under pulsed conditions. Pulse width ≤ 300μs; duty cycle ≤ 2%.

2. Switching characteristics are independent of operating junction temperature.

3. For design aid only, not subject to production testing.

TYPICAL CHARACTERISTICS



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