



UT2306

Power MOSFET

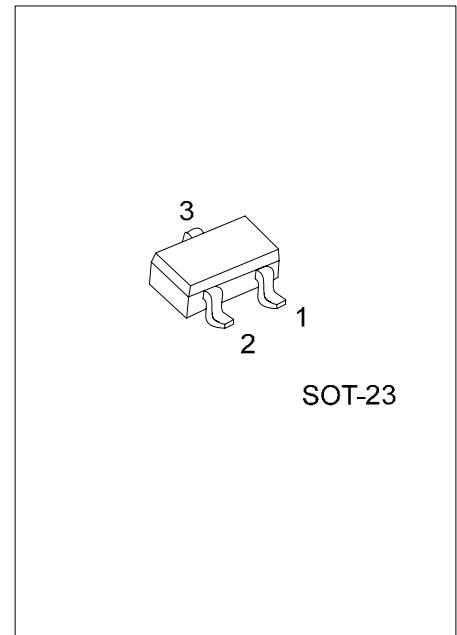
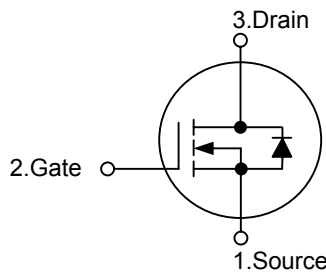
N-CHANNEL ENHANCEMENT MODE

DESCRIPTION

The UT2306 is N-channel Power MOSFET, designed with high density cell, with fast switching speed, ultra low on-resistance, excellent thermal and electrical capabilities.

Used in commercial and industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

SYMBOL



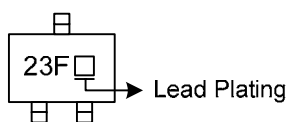
*Pb-free plating product number: UT2306L

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
UT2306-AE3-R	UT2306L-AE3-R	SOT-23	S	G	D	Tape Reel

<p>UT2306L-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±8	V
Continuous Drain Current	I _D	3.5	A
Pulsed Drain Current (Note 1, 2)	I _{DM}	14	A
Power Dissipation	P _D	0.83	W
Junction Temperature	T _J	+150	
Storage Temperature	T _{STG}	-55 ~ +150	°C

Note: 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.

■ THERMAL DATA

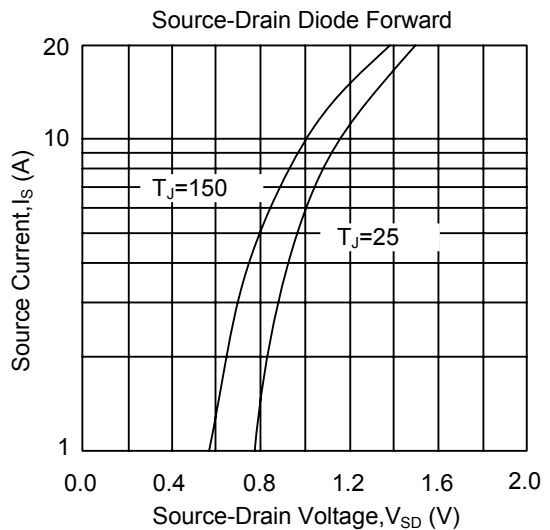
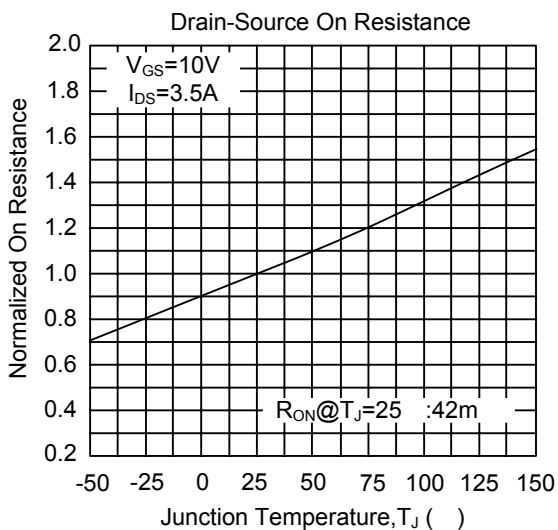
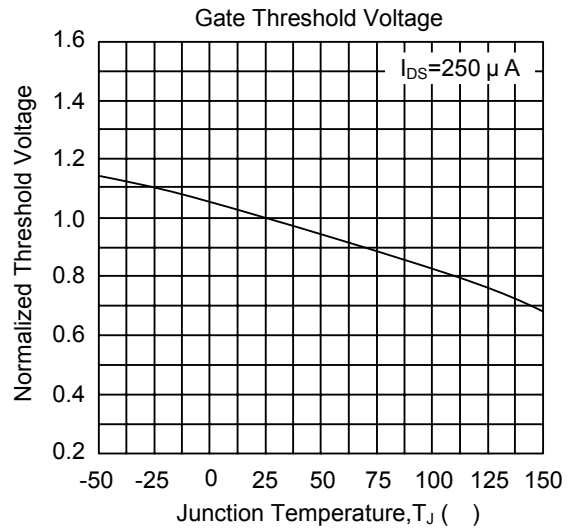
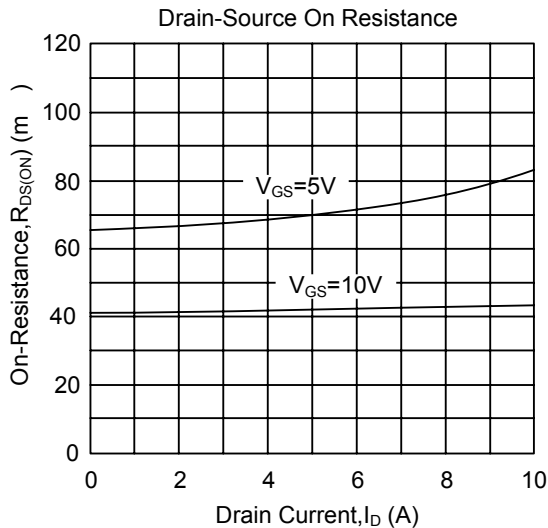
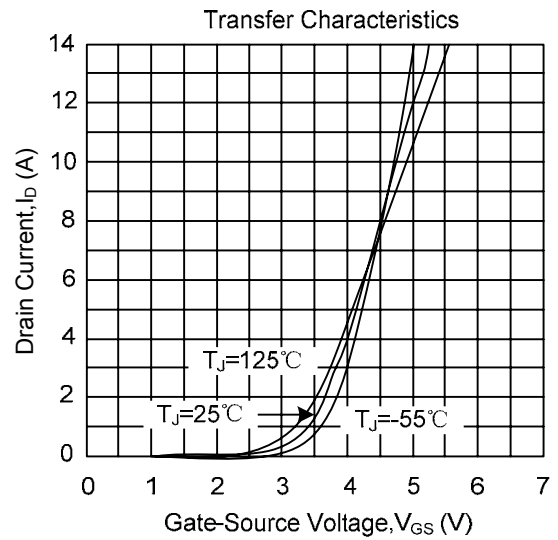
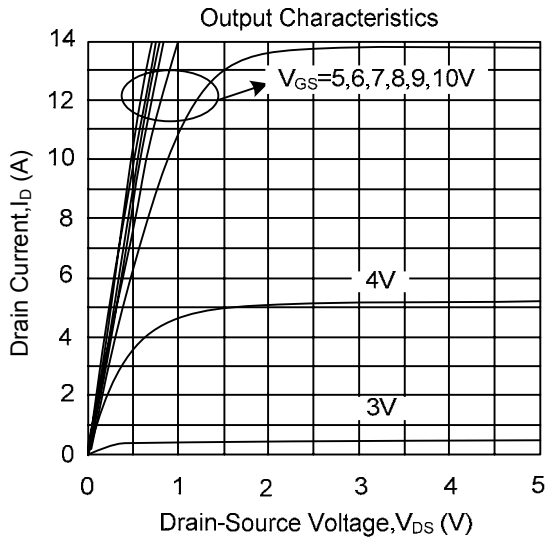
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction-to-Ambient	θ _{JA}			150	°C/W

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

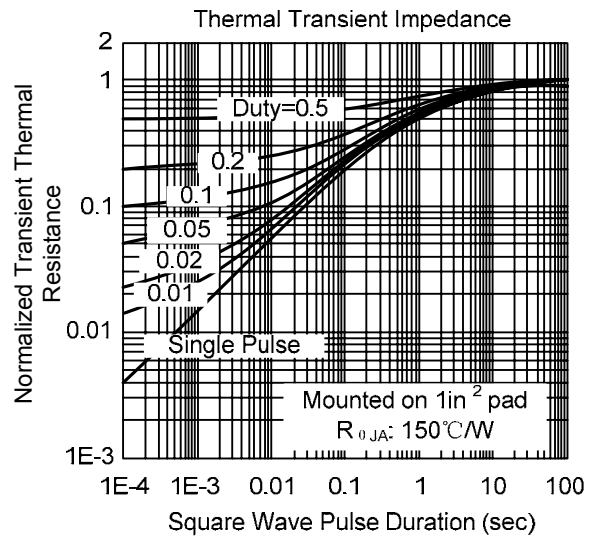
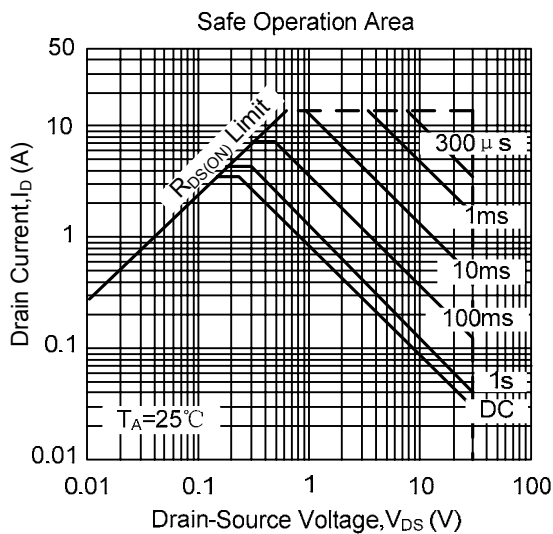
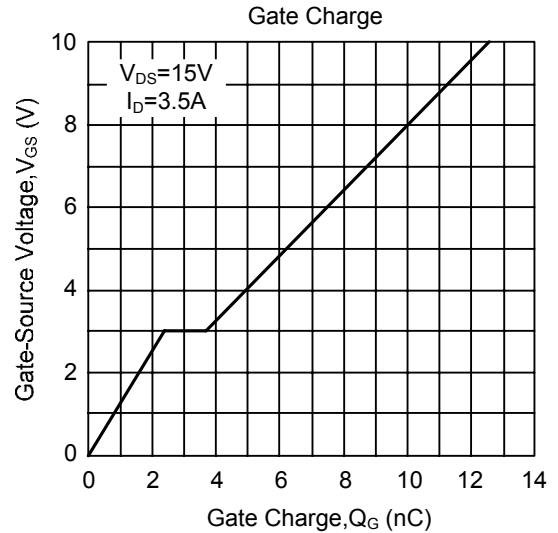
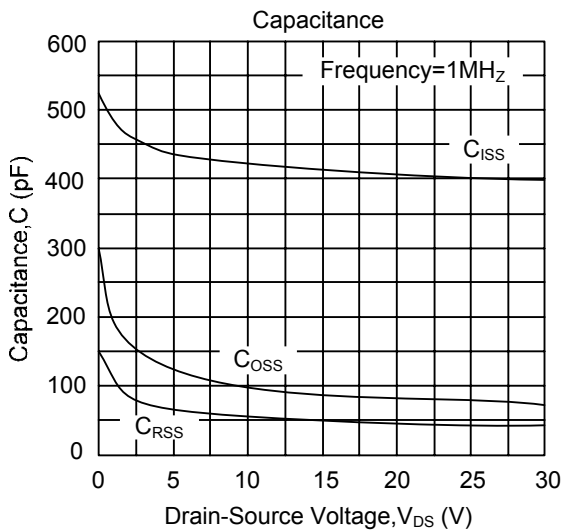
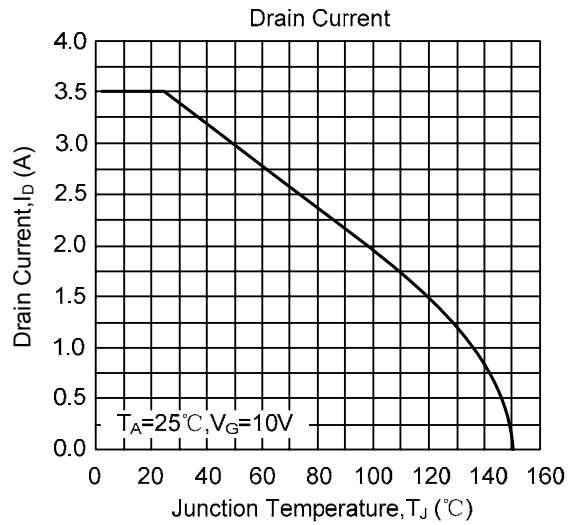
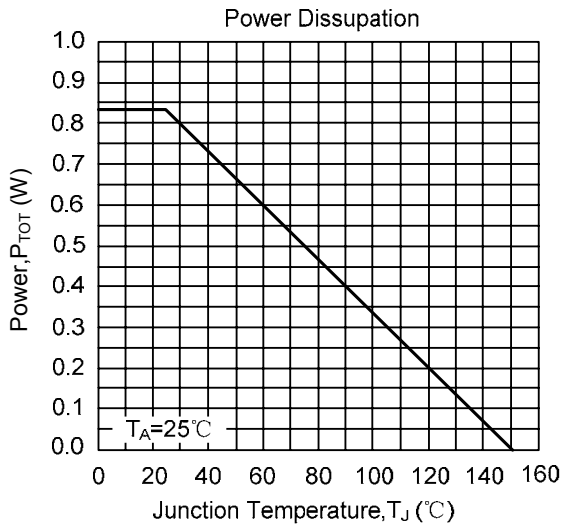
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2	V
Drain-Source On-State Resistance (Note 2)	R _{DS(ON)}	V _{GS} =10V, I _D =3.5A		42	65	mΩ
		V _{GS} =5V, I _D =2.8A		70	90	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz		400		pF
Output Capacitance	C _{OSS}			80		pF
Reverse Transfer Capacitance	C _{RSS}			45		pF
SWITCHING CHARACTERISTICS						
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =15V, V _{GS} =10V, I _D =1A, R _G =6Ω, R _L =15Ω		10	19	ns
Turn-ON Rise Time	t _R			8	15	ns
Turn-OFF Delay Time	t _{D(OFF)}			19	35	ns
Turn-OFF Fall Time	t _F			6.2	12	ns
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =3.5A		12.5	16	nC
Gate-Source Charge	Q _{GS}			2.4		nC
Gate-Drain Charge	Q _{GD}			1.3		nC
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V _{SD}	V _{GS} =0V, I _S =1.25A		0.8	1.3	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				1.3	A

Note:1. Pulse width limited by T_{J(MAX)}
 2. Pulse width ≤300us, duty cycle ≤2%.
 3. Surface mounted on FR4 board t = 10sec.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS(Cont.)



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