



UT2301

Power MOSFET

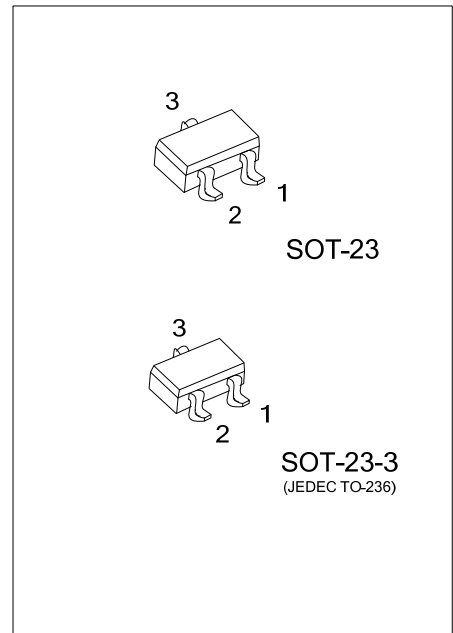
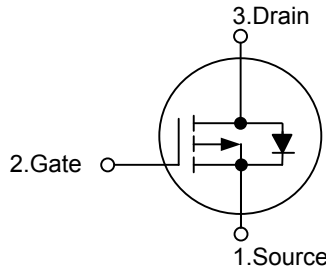
2.8A, 20V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

■ DESCRIPTION

The UTC **UT2301** is P-channel enhancement mode power MOSFET, designed in serried ranks. With fast switching speed, low on-resistance, favorable stabilization.

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

■ SYMBOL

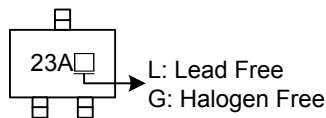


■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2301L-AE2-R	UT2301G-AE2-R	SOT-23-3	S	G	D	Tape Reel
UT2301L-AE3-R	UT2301G-AE3-R	SOT-23	S	G	D	Tape Reel

<p>UT2301L-AE3-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) AE2: SOT-23-3, AE3: SOT-23</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ MARKING



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

PARAMETER	SYMBOL	RATING	UNITS
Drain-Source Voltage	V _{DSS}	-20	V
Gate-Source Voltage	V _{GSS}	±8	V
Continuous Drain Current	I _D	-2.8	A
Pulsed Drain Current (Note 1, 2)	I _{DM}	-10	A
Total Power Dissipation	P _D	1.14	W
Junction Temperature	T _J	+150	°C
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

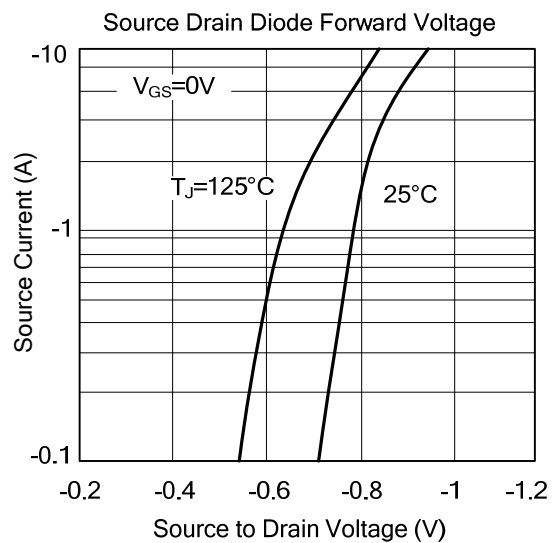
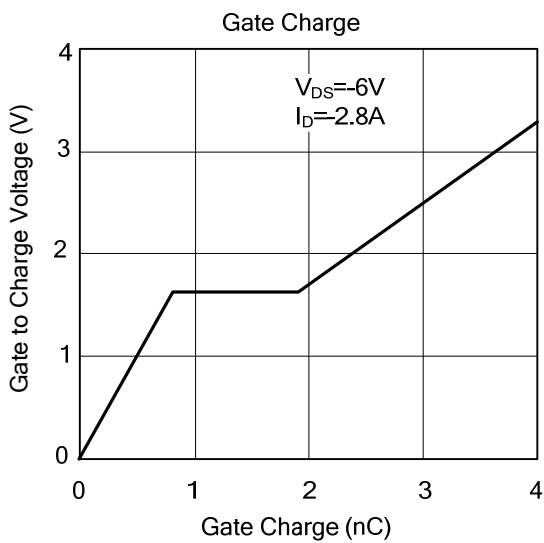
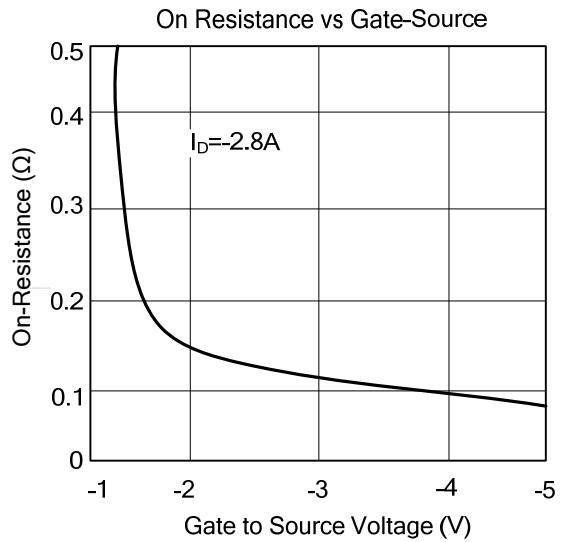
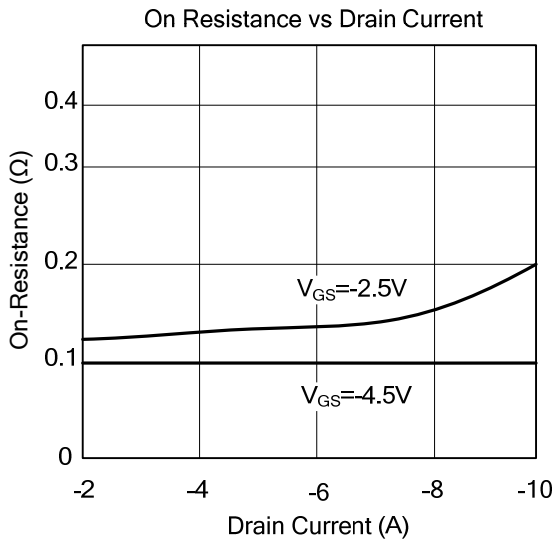
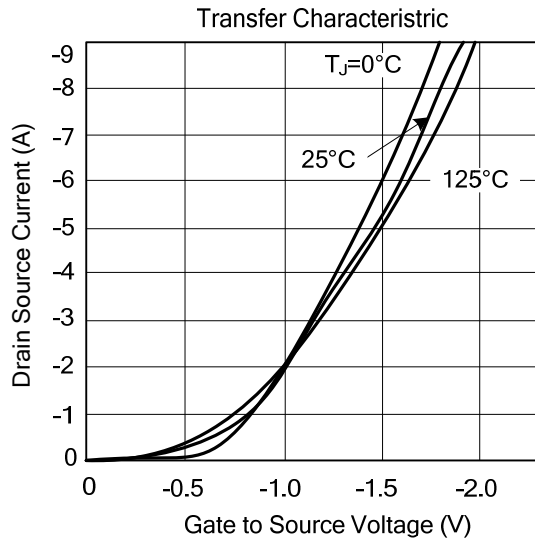
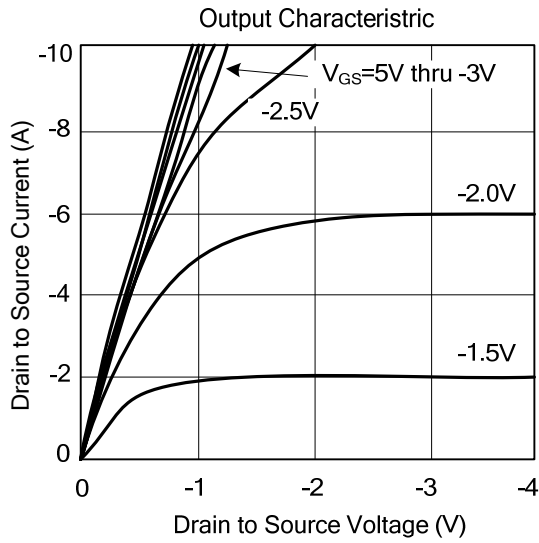
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note 3)	θ _{JA}			110	°C/W

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

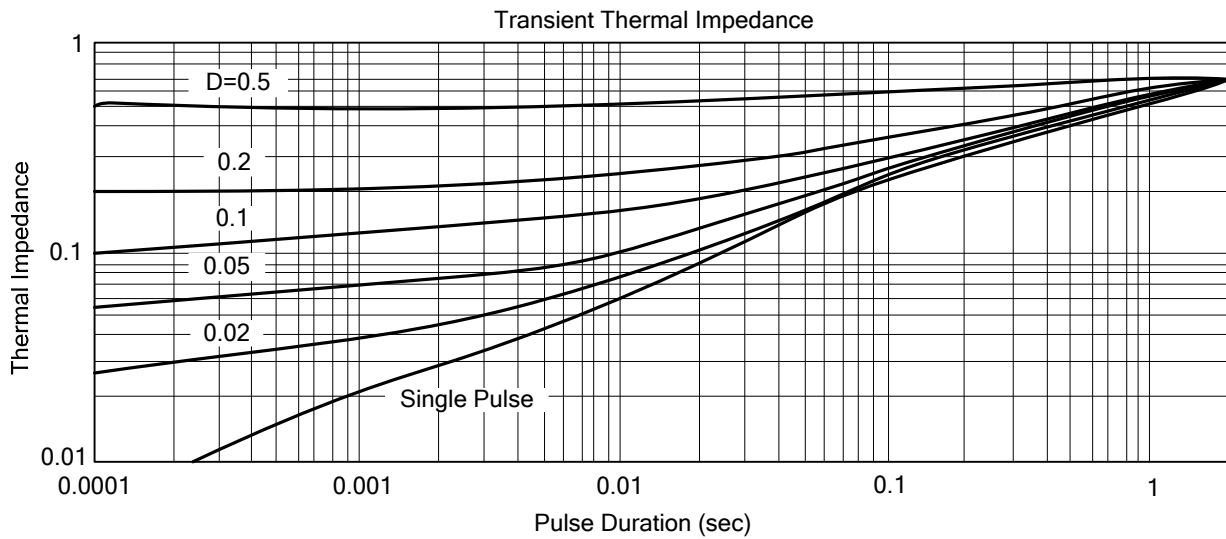
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-20			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250uA	-0.45			V
Static Drain-Source On-State Resistance (Note 2)	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-2.8A		95	130	mΩ
		V _{GS} =-2.5V, I _D =-2.0A		122	190	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-6V, f=1.0MHz		447		pF
Output Capacitance	C _{OSS}			127		pF
Reverse Transfer Capacitance	C _{RSS}			80		pF
SWITCHING CHARACTERISTICS						
Turn-ON Delay Time (Note 2)	t _{D(ON)}	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-1A, R _G =6Ω, R _L =6Ω		5	25	ns
Turn-ON Rise Time	t _R			19	60	ns
Turn-OFF Delay Time	t _{D(OFF)}			95	110	ns
Turn-OFF Fall Time	t _F			65	80	ns
Total Gate Charge (Note 2)	Q _G	V _{DS} =-6V, V _{GS} =-4.5V, I _D =-2.8A		5.4	10	nC
Gate-Source Charge	Q _{GS}			0.8		nC
Gate-Drain Charge	Q _{GD}			1.1		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage (Note 2)	V _{SD}	V _{GS} =0V, I _S =-1.6A		-0.8	-1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				-1.6	A

- Notes: 1. Pulse width limited by T_{J(MAX)}
 2. Pulse width ≤300μs, duty cycle ≤2%.
 3. Surface mounted on 1 in² copper pad of FR4 board

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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