



UT2316

Power MOSFET

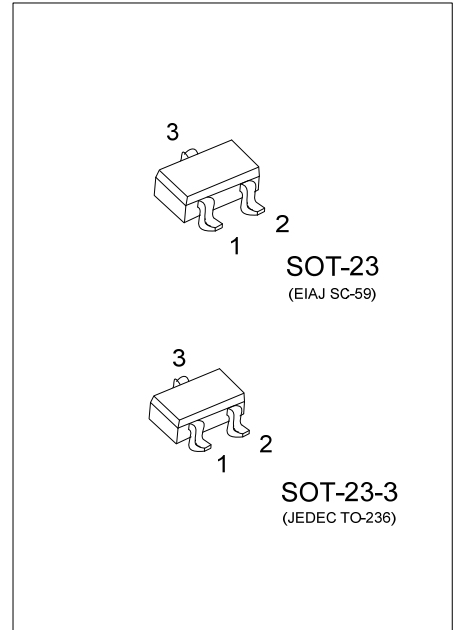
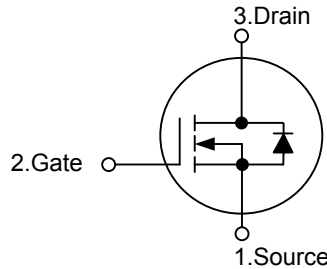
N-CHANNEL ENHANCEMENT MODE

DESCRIPTION

The UTC **UT2316** is N-channel enhancement mode Power MOSFET, designed in serried ranks with fast switching speed, low on-resistance and favorable stabilization.

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

SYMBOL



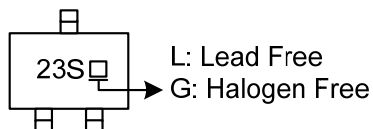
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2316L-AE2-R	UT2316G-AE2-R	SOT-23-3	G	S	D	Tape Reel
UT2316L-AE3-R	UT2316G-AE3-R	SOT-23	G	S	D	Tape Reel

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

<p>UT2316G-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE2: SOT-23-3, AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current (Note 3)	I_D	3.6	A
Pulsed Drain Current (Note 1, 2)	I_{DM}	16	A
Total Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	0.96	W
Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

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 CHARACTERISTICS

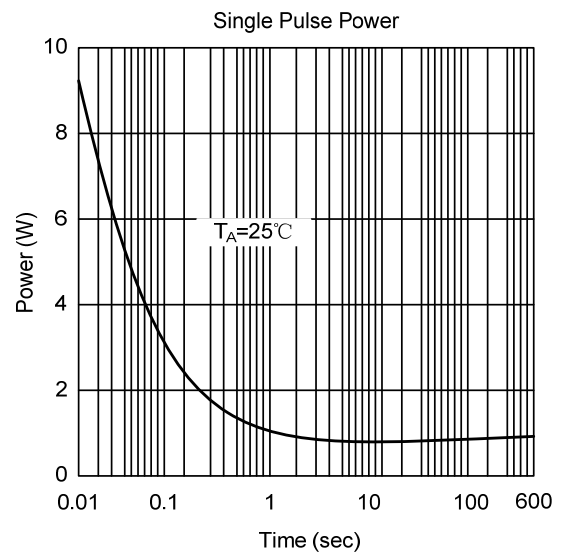
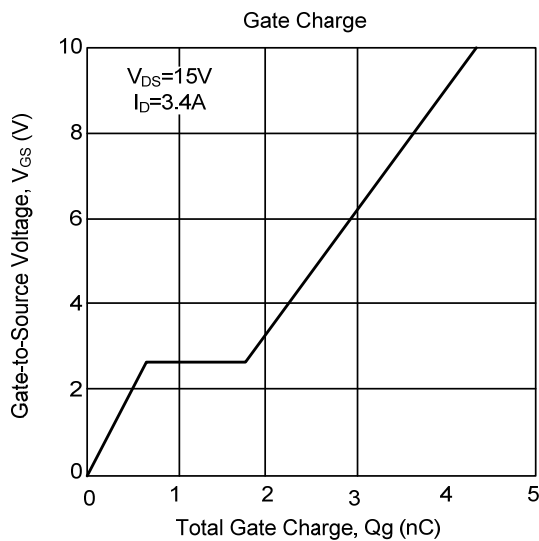
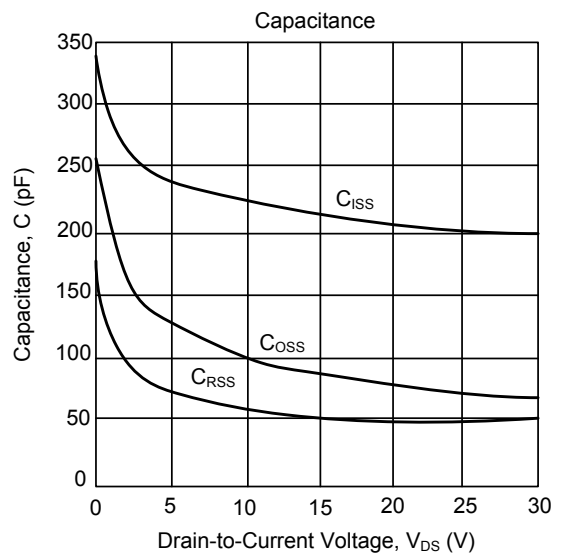
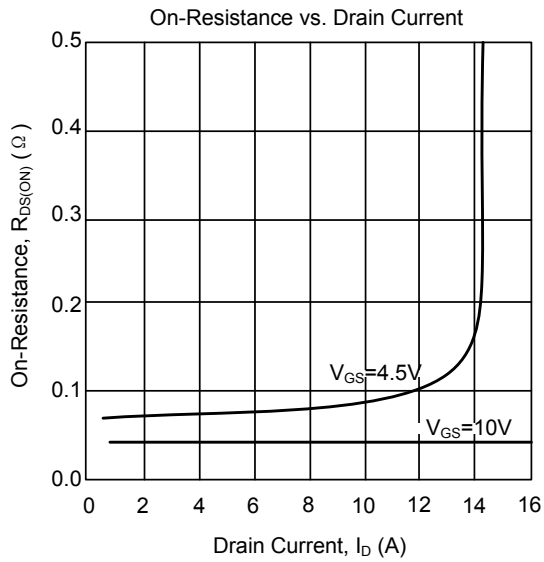
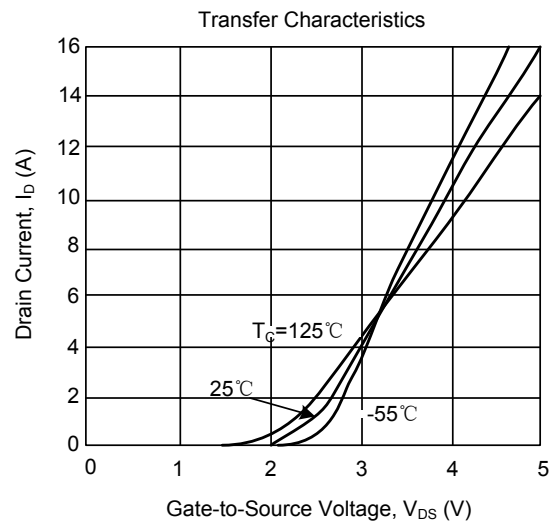
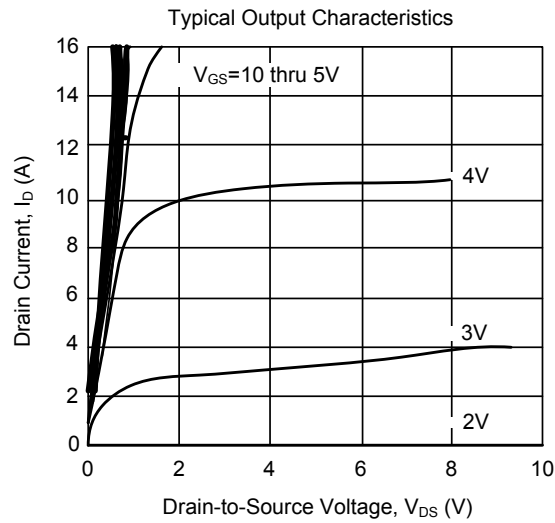
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 3)	θ_{JA}	175	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, unless otherwise specified)

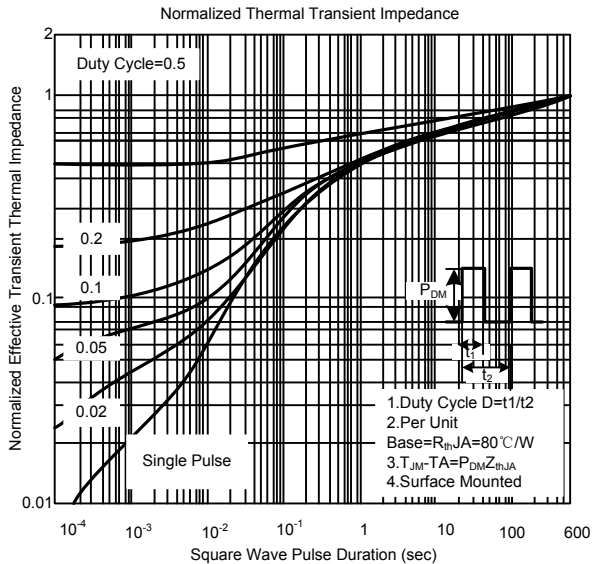
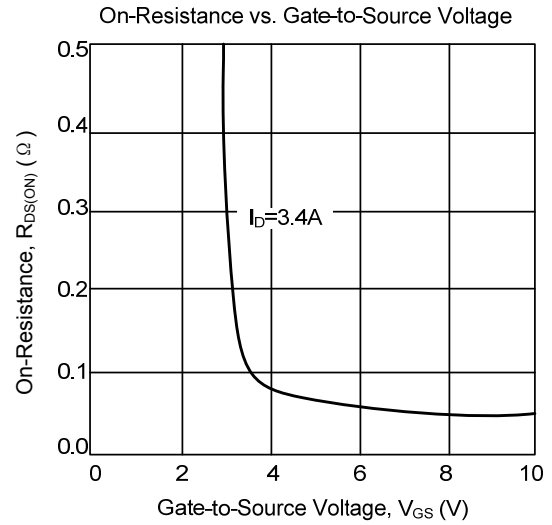
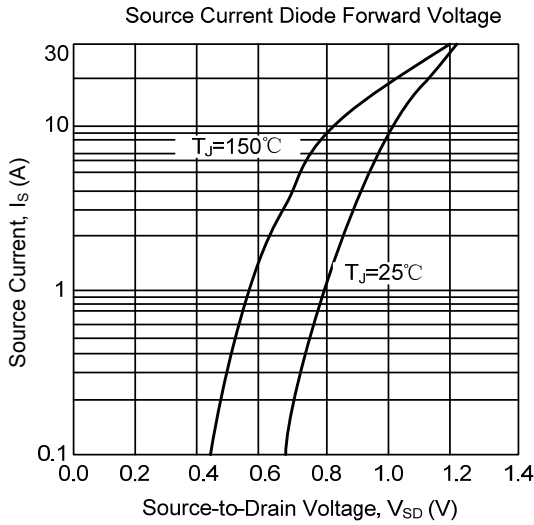
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30			V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.8			V
On-State Drain Current	$I_{D(ON)}$	$V_{DS} = 4.5V, V_{GS} = 10V$	6			A
		$V_{DS} = 4.5V, V_{GS} = 4.5V$	4			A
Drain-Source On-State Resistance (Note 2)	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3.4A$		42	50	m Ω
		$V_{GS}=4.5V, I_D=2.6A$		68	85	m Ω
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$		215		pF
Output Capacitance	C_{OSS}			90		pF
Reverse Transfer Capacitance	C_{RSS}			55		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge	Q_G	$V_{DS}=15V, V_{GS}=10V, I_D=3.6A$		4.3	7	nC
Gate-Source Charge	Q_{GS}			0.65		nC
Gate-Drain Charge	Q_{GD}			1.2		nC
Turn-ON Delay Time	$t_{D(ON)}$	$V_{DD}=15V, V_{GS}=10V, I_D=1A, R_G=6\Omega, R_L=15\Omega$		9	15	ns
Turn-ON Rise Time	t_R			9	15	ns
Turn-OFF Delay Time	$t_{D(OFF)}$			14	20	ns
Turn-OFF Fall Time	t_F			6	12	ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V_{SD}	$V_{GS}=0V, I_S=0.8A$		0.88	1.2	V
Maximum Continuous Drain-Source Diode Forward Current	I_S	$V_D=V_G=0V, V_S=1.2V$		0.8		A

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
 2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 3. Surface mounted on 1 in² copper pad of FR4 board

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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