



UT2316

Power MOSFET

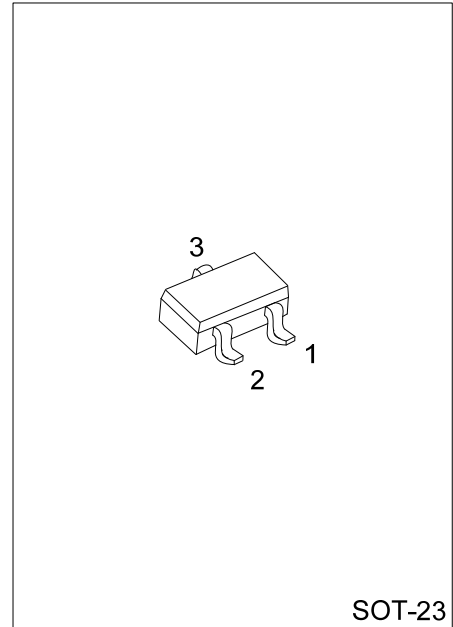
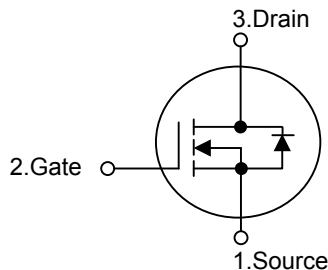
N-CHANNEL ENHANCEMENT MODE

■ 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

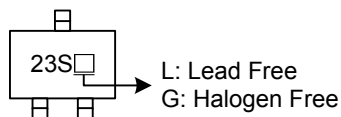


■ ORDERING INFORMATION

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

UT2316L-AE3-R		(1)Packing Type	(1) R: Tape Reel
		(2)Package Type	(2) AE3: SOT-23
		(3)Lead Plating	(3) G: Halogen Free, L: Lead Free

■ MARKING



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

PARAMETER	SYMBOL	RATING	UNITS
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 DATA**

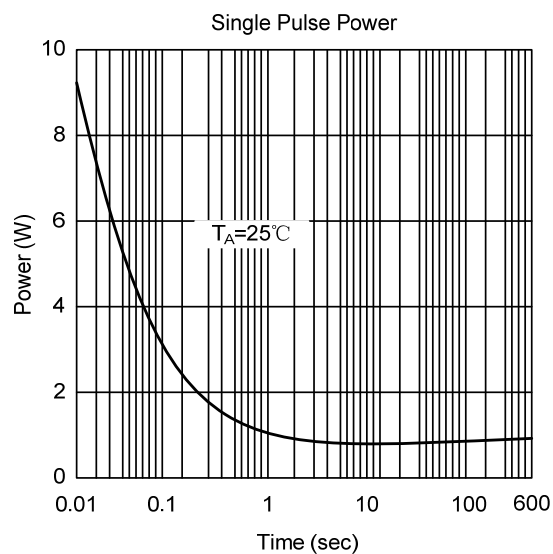
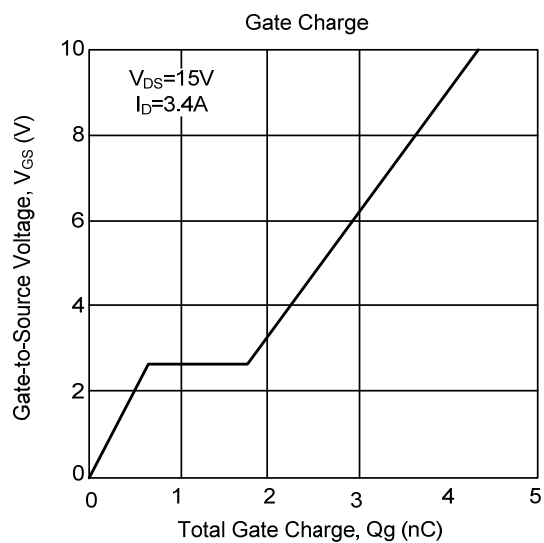
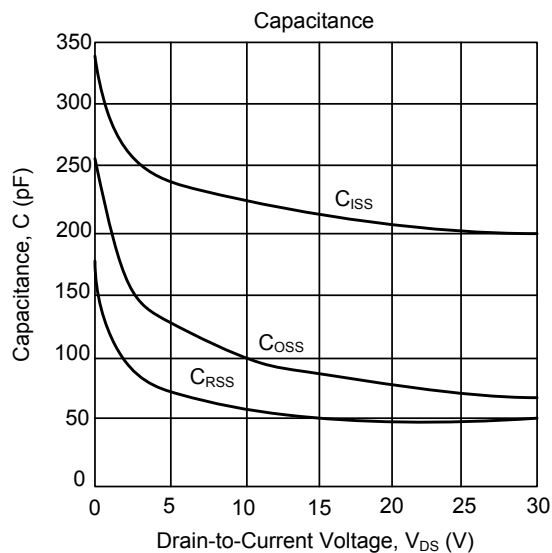
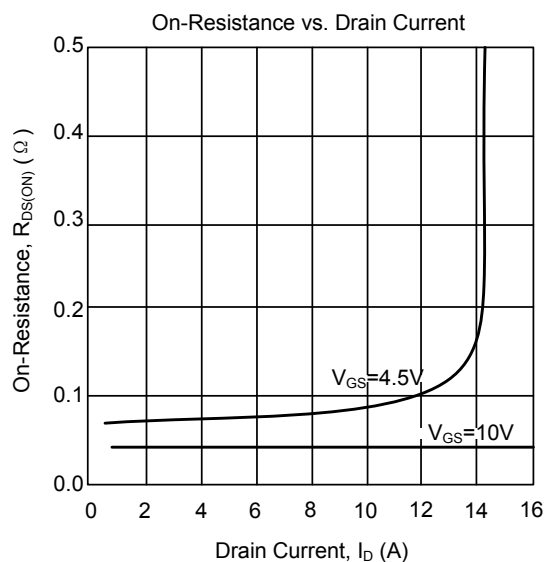
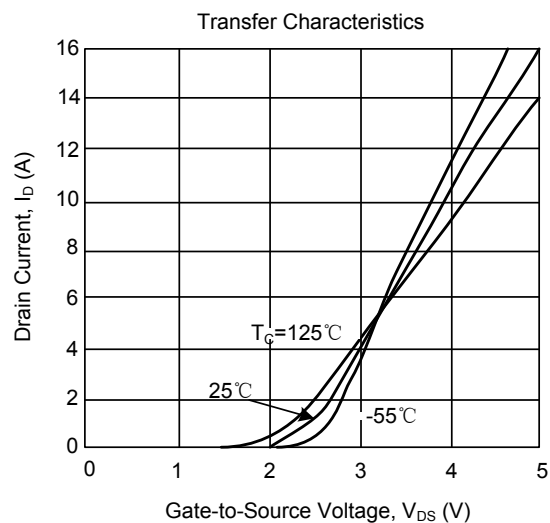
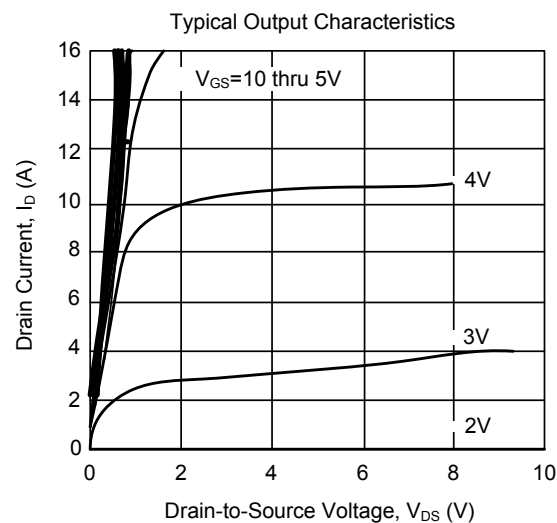
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note 3)	θ_{JA}			175	$^\circ\text{C}/\text{W}$

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

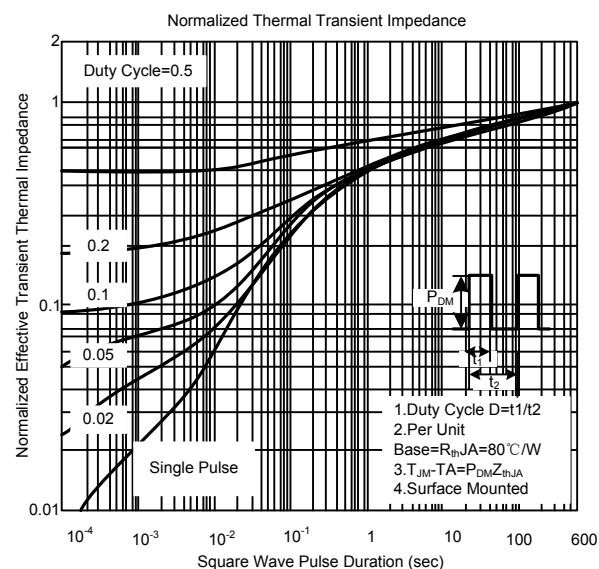
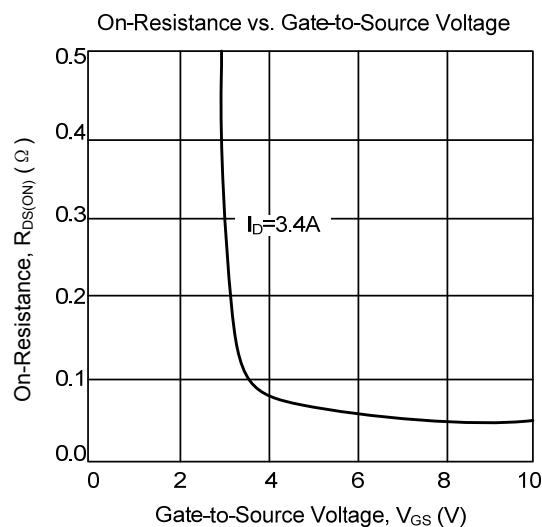
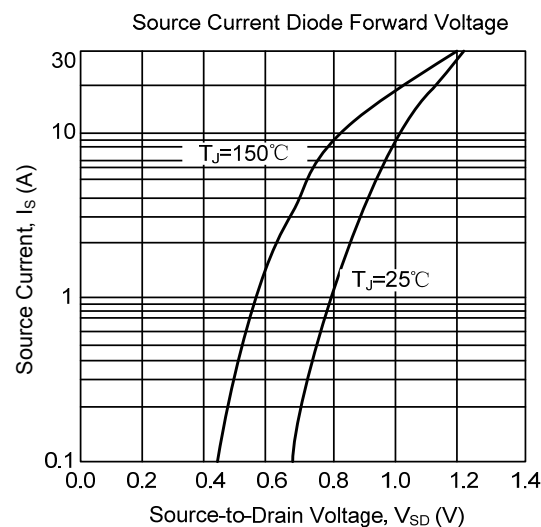
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	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	mΩ
		V _{GS} =4.5V, I _D =2.6A		68	85	mΩ
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						
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =15V, V _{GS} =10V, I _D = 1A, R _G =6Ω, R _L =15Ω		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
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
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. Pulse width limited by $T_{J(MAX)}$
2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
3. Surface mounted on 1 in² copper pad of FR4 board

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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