



UT3400

Power MOSFET

5.8A, 30V N-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The UTC **UT3400** is an N-ch enhancement MOSFET providing the customers with perfect $R_{DS(ON)}$ and low gate charge. This device can be operated with 2.5V low gate voltage.

The UTC **UT3400** is optimized for applications, such as a load switch or in PWM.

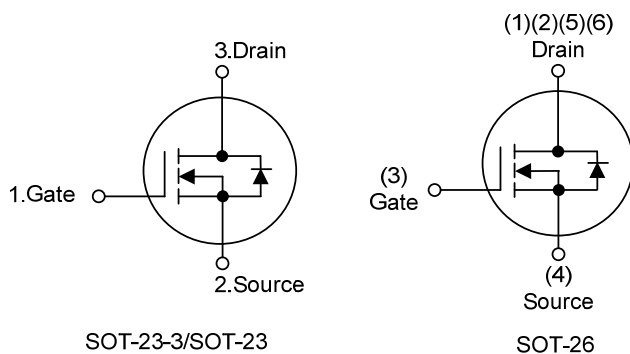
FEATURES

* $R_{DS(ON)} \leq 28 \text{ m}\Omega$ @ $V_{GS}=10\text{V}$, $I_D=5.8\text{A}$

$R_{DS(ON)} \leq 33 \text{ m}\Omega$ @ $V_{GS}=4.5\text{V}$, $I_D=5.0\text{A}$

$R_{DS(ON)} \leq 52 \text{ m}\Omega$ @ $V_{GS}=2.5\text{V}$, $I_D=4.0\text{A}$

SYMBOL

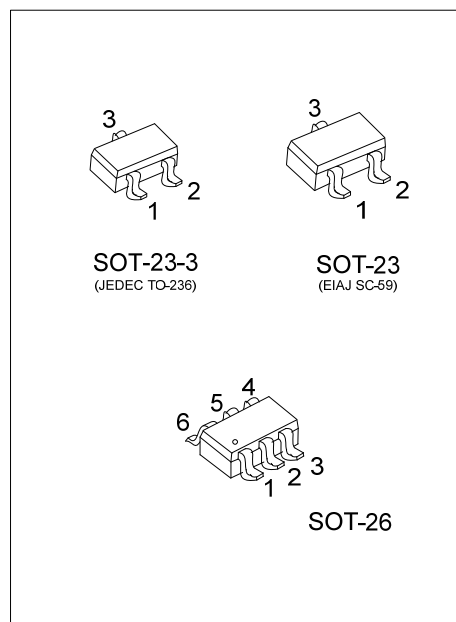


ORDERING INFORMATION

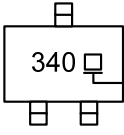
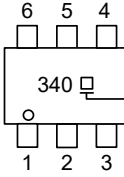
Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UT3400L-AE2-R	UT3400G-AE2-R	SOT-23-3	G	S	D	-	-	-	Tape Reel
UT3400L-AE3-R	UT3400G-AE3-R	SOT-23	G	S	D	-	-	-	Tape Reel
UT3400L-AG6-R	UT3400G-AG6-R	SOT-26	D	D	G	S	D	D	Tape Reel

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

UT3400G-AE2-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AE2: UTC654G-AE2-R, AE3: SOT-23, AG6: SOT-26
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free



■ MARKING

SOT-23-3 / SOT-23	SOT-26
 340 L: Lead Free G: Halogen Free	 340 L: Lead Free G: Halogen Free

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

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 12	V
Continuous Drain Current		I_D	5.8	A
Pulsed Drain Current (Note 2)		I_{DM}	30	A
Power Dissipation	SOT-23-3	P_D	0.73	W
	SOT-23		1.25	W
	SOT-26		1.2	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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. Repetitive Rating: Pulse width limited by maximum junction temperature.

3. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 0.5\%$.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient (Note)	SOT-23-3	θ_{JA}	170	$^{\circ}\text{C/W}$
	SOT-23		100	$^{\circ}\text{C/W}$
	SOT-26		104	$^{\circ}\text{C/W}$

Note: Surface mounted on 1 in² copper pad of FR4 board with 2oz.

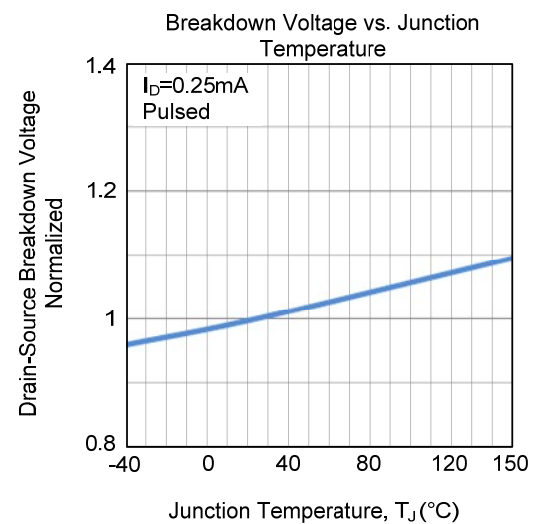
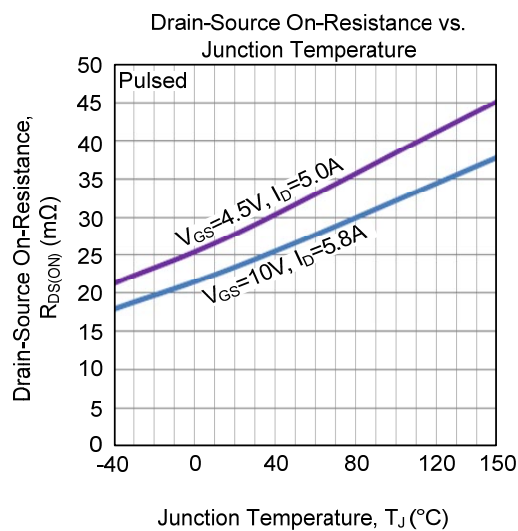
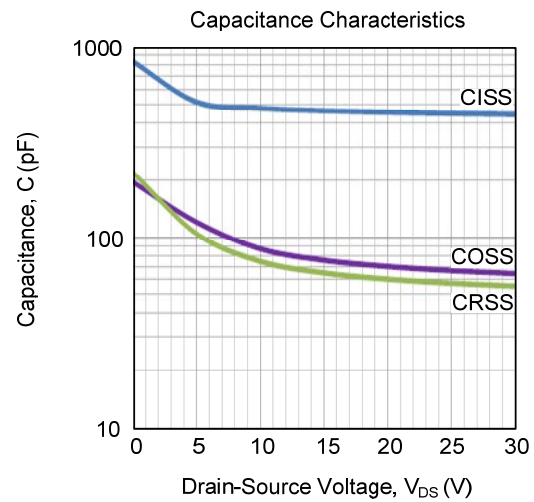
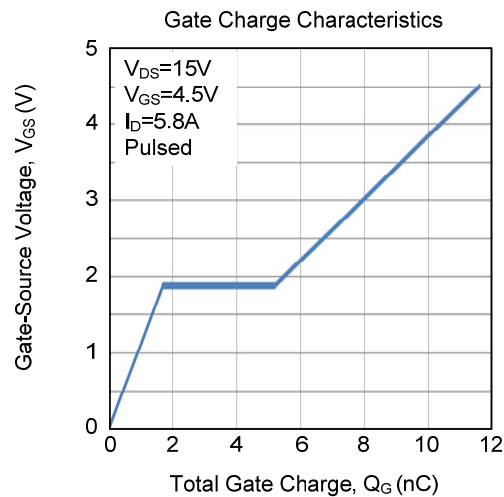
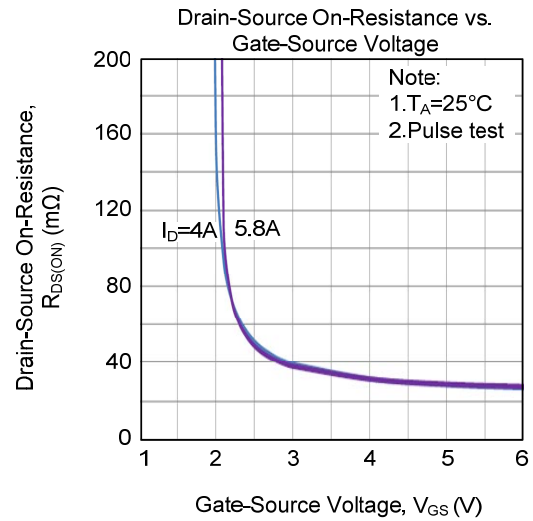
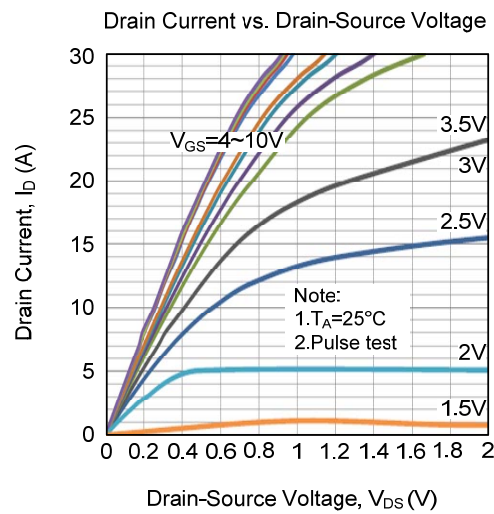
■ ELECTRICAL CHARACTERISTICS ($T_J=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V			100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	0.7	1.1	1.4	V
Drain to Source On-state Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5.8A		22.8	28	mΩ
		V _{GS} =4.5V, I _D =5.0A		27.3	33	mΩ
		V _{GS} =2.5V, I _D =4.0A		43.3	52	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =15V, V _{GS} =0V, f =1MHz		460		pF
Output Capacitance	C _{OSS}			75		pF
Reverse Transfer Capacitance	C _{RSS}			62		pF
SWITCHING PARAMETERS						
Total Gate Charge	Q _G	V _{DS} =15V, V _{GS} =4.5V, I _D =5.8A (Note 1, 2)		11		nC
Gate Source Charge	Q _{GS}			1.4		nC
Gate Drain Charge	Q _{GD}			3.4		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DS} =15V, V _{GS} =10V, I _D =5.8A R _G =3Ω (Note 1, 2)		5		ns
Turn-ON Rise Time	t _R			16		ns
Turn-OFF Delay Time	t _{D(OFF)}			17		ns
Turn-OFF Fall-Time	t _F			20		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	I _S				5.8	A
Drain-Source Diode Forward Voltage	V _{SD}	I _S =1.0A, V _{GS} =0V		0.71	1	V

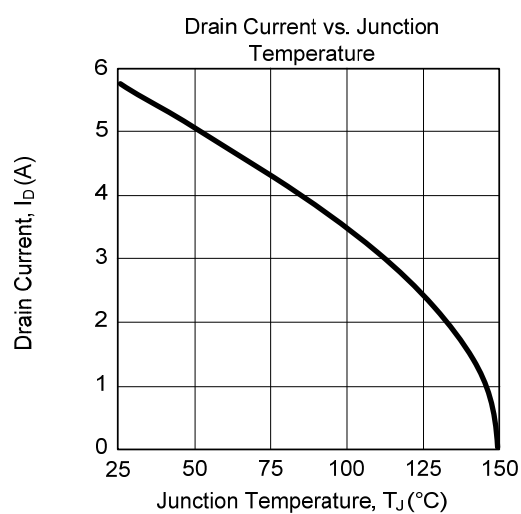
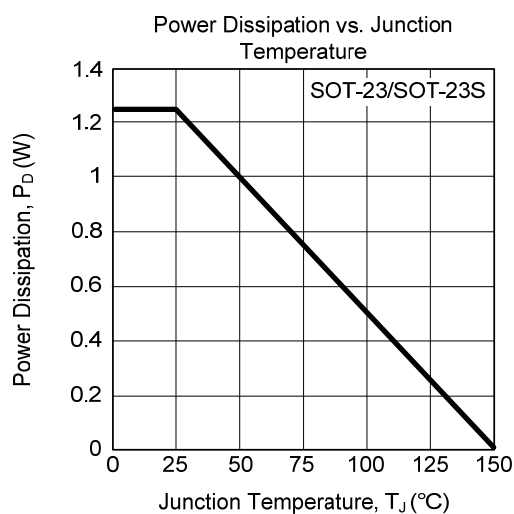
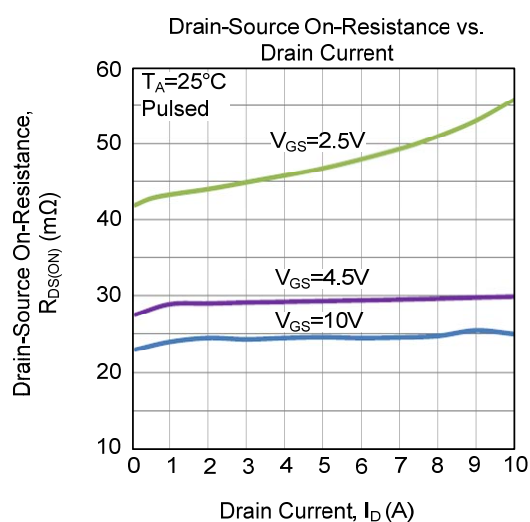
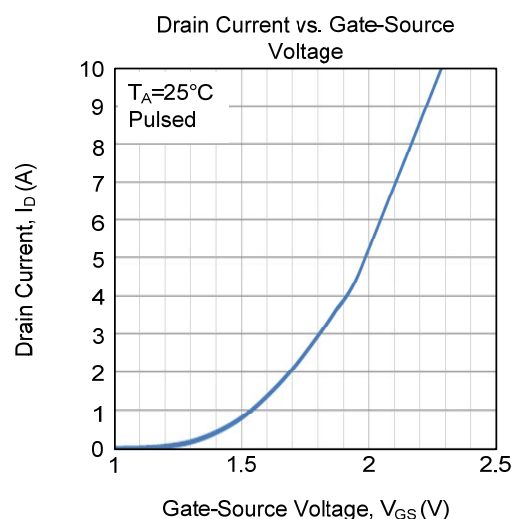
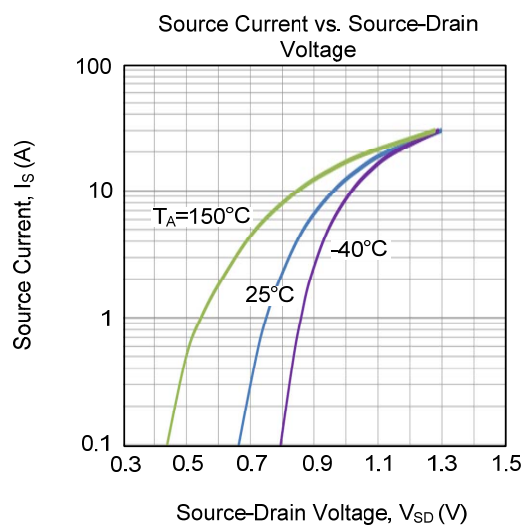
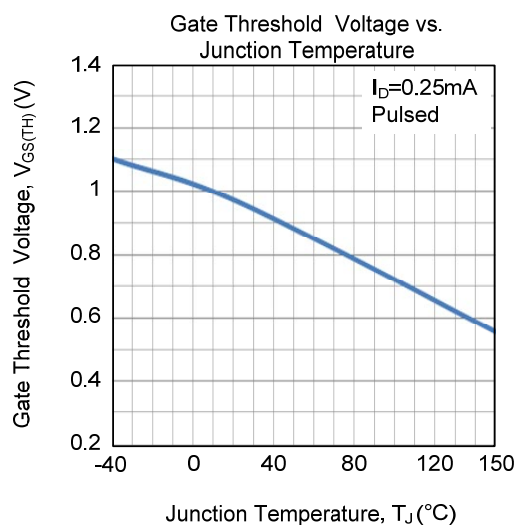
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2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 0.5\%$.

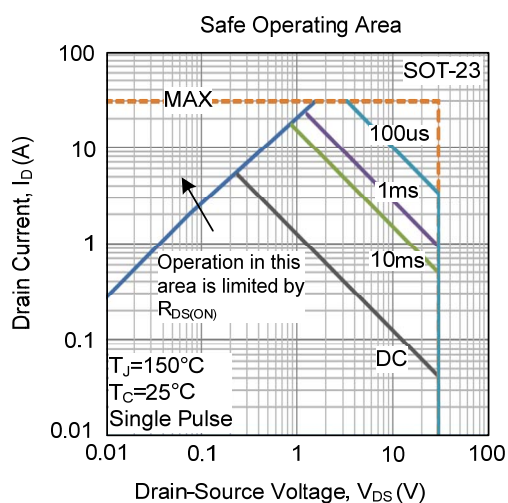
TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



■ TYPICAL CHARACTERISTICS (Cont.)



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