



UT3404

Power MOSFET

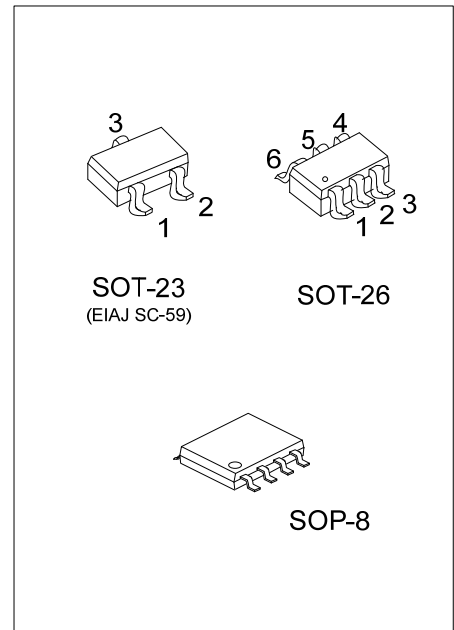
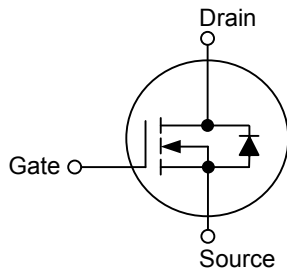
N-CHANNEL ENHANCEMENT MODE MOSFET

DESCRIPTION

The **UT3404** is N-Channel enhancement mode power MOSFET, designed with high density cell, with fast switching speed, low on-resistance, excellent thermal and electrical capabilities and operation with low gate voltages.

This device is suitable for use as a load switch or in PWM applications.

SYMBOL



ORDERING INFORMATION

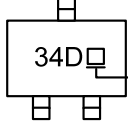
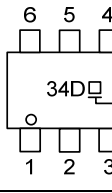
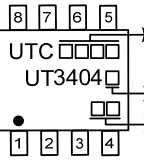
Ordering Number		Package	Pin Assignment								Packing
Lead Free	Halogen Free		1	2	3	4	5	6	7	8	
UT3404L-AE3-R	UT3404G-AE3-R	SOT-23	G	S	D	-	-	-	-	-	Tape Reel
UT3404L-AG6-R	UT3404G-AG6-R	SOT-26	D	D	G	S	D	D	-	-	Tape Reel
UT3404L-S08-R	UT3404G-S08-R	SOP-8	S	S	S	G	D	D	D	D	Tape Reel

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

<p>UT3404G-AE3-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23, S08: SOP-8 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

PACKAGE	MARKING
SOT-23	 <p>34D□</p> <p>L: Lead Free G: Halogen Free</p>
SOT-26	 <p>34D□</p> <p>L: Lead Free G: Halogen Free</p>
SOP-8	 <p>UTC □□□□ → Date Code</p> <p>UT3404□ → L: Lead Free G: Halogen Free</p> <p>□□ → Lot Code</p>

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

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current (Note 3)	I _D	5.8	A
Pulsed Drain Current (Note 1, 2)	I _{DM}	20	A
Power Dissipation	SOT-23	1.4	W
	SOT-26	1.6	W
	SOP-8	2	W
Junction Temperature	T _J	+150	°C
Strong 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 CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 3)	SOT-23	85	°C/W
	SOT-26	115	°C/W
	SOP-8	62.5	°C/W

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

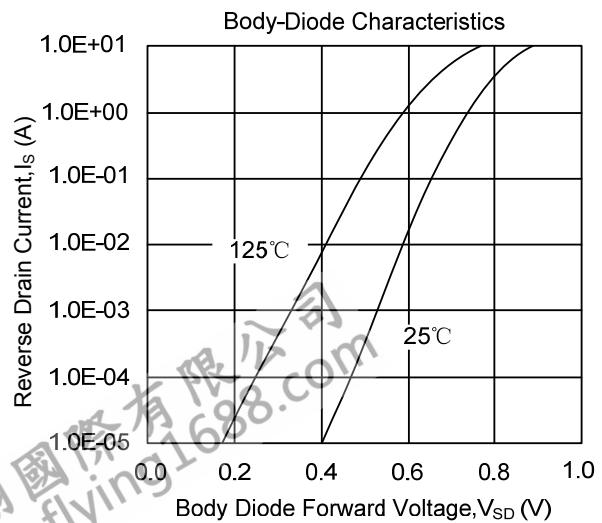
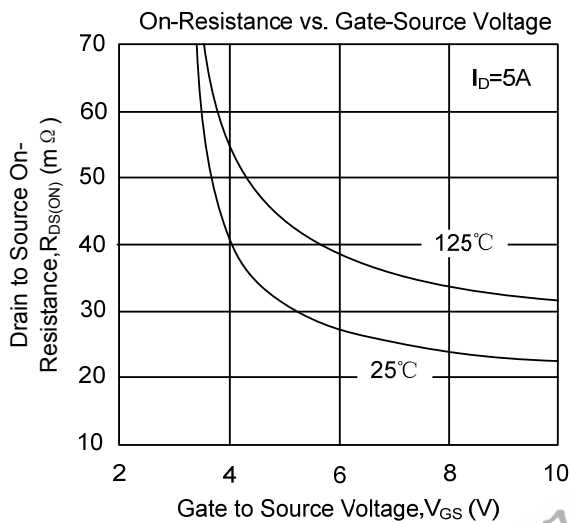
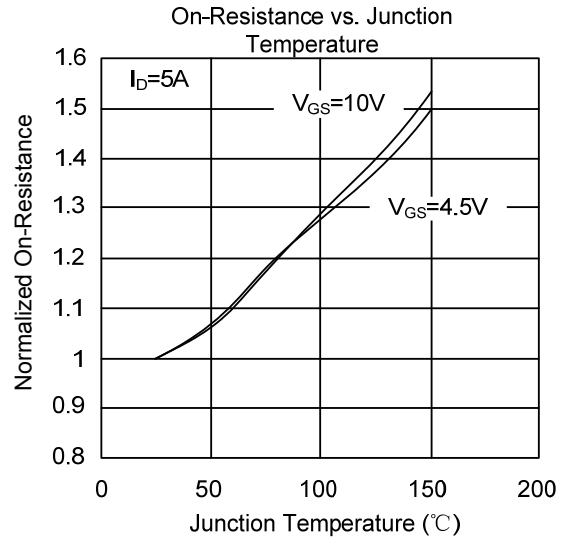
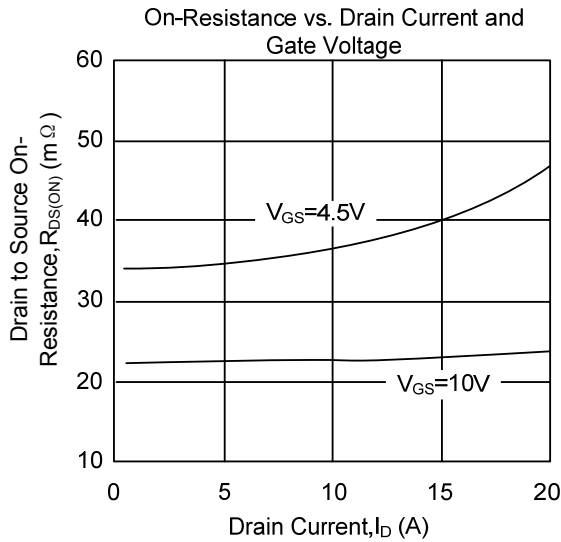
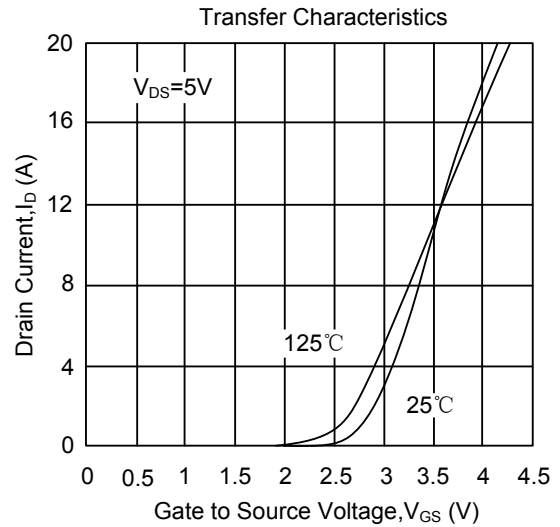
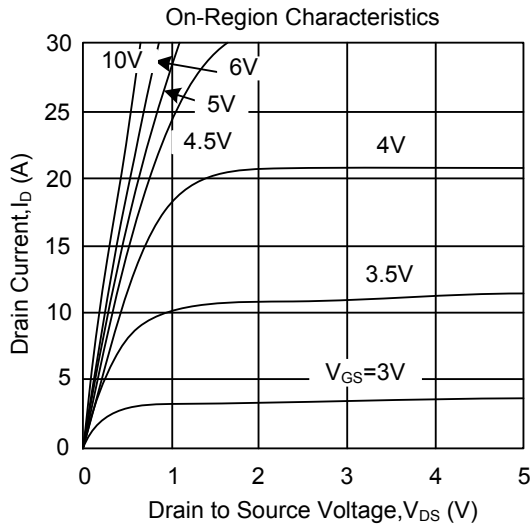
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250uA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V			1	uA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250uA	1	1.9	3	V
On State Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	20			A
Drain-Source On-State Resistance (Note 2)	R _{DS(ON)}	V _{GS} =10V, I _D =5.8A		22.5	28	mΩ
		V _{GS} =4.5V, I _D =5A		34.5	43	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =15V, f=1.0MHz		680	820	pF
Output Capacitance	C _{OSS}			102		pF
Reverse Transfer Capacitance	C _{RSS}			77		pF
SWITCHING CHARACTERISTICS						
Turn-ON Delay Time (Note 2)	t _{D(ON)}	V _{DS} =15V, V _{GS} =10V, R _G =3Ω, R _D =2.7Ω		4.6	6.5	ns
Turn-ON Rise Time	t _R			3.8	5.7	ns
Turn-OFF Delay Time	t _{D(OFF)}			20.9	30	ns
Turn-OFF Fall Time	t _F			5	7.5	ns
Total Gate Charge (Note 2)	Q _G	V _{DS} =15V, V _{GS} =10V, I _D =5.8A		13.88	17	nC
Gate-Source Charge	Q _{GS}			1.8		nC
Gate-Drain Charge	Q _{GD}			3.12		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V _{SD}	I _S =1A		0.76	1	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				2.5	A
Reverse Recovery Time	t _{rr}	I _F =5.8A, di/dt=100A/μs		16.1	21	ns
Reverse Recovery Charge	Q _{rr}				7.4	10

Notes: 1. Repetitive Rating : Pulse width limited by maximum junction temperature.

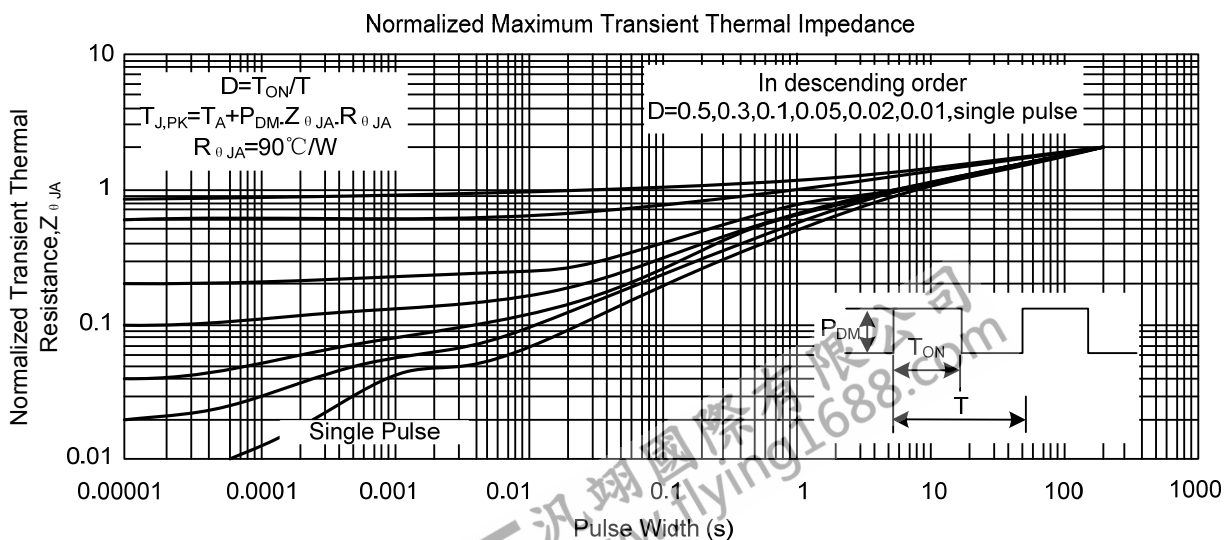
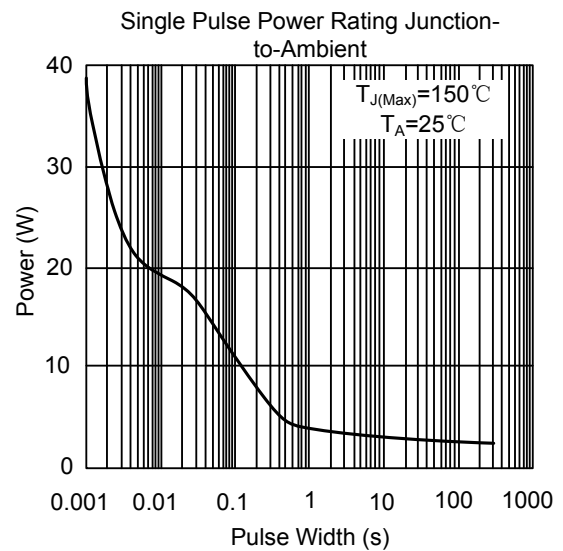
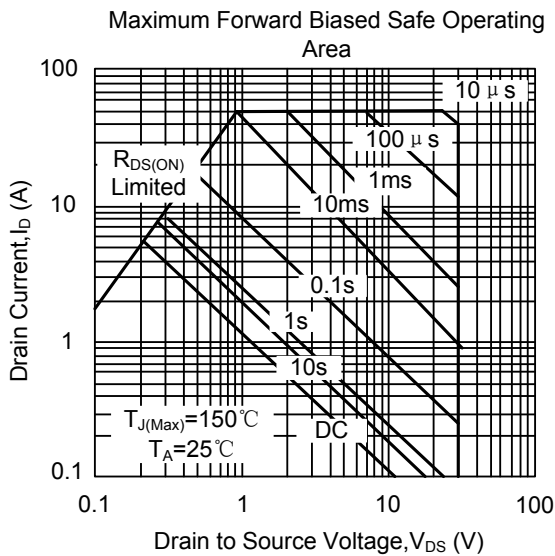
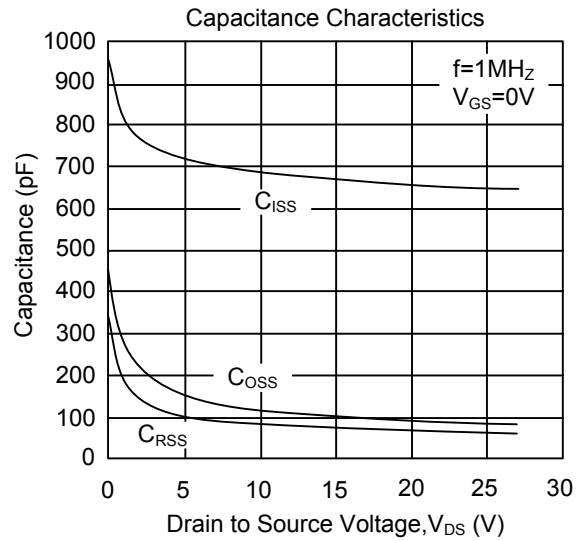
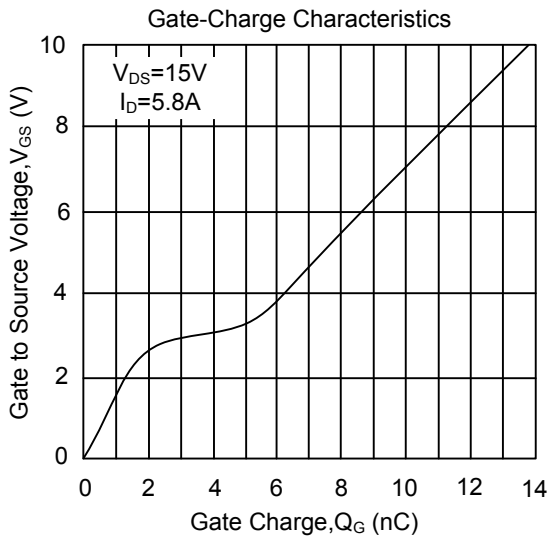
2. Pulse width ≤300us, duty cycle ≤2%.

3. Surface mounted on 1 in² copper pad of FR4 board.

TYPICAL CHARACTERISTICS



TYPICAL CHARACTERISTICS (Cont.)



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