



UT3406

Preliminary

Power MOSFET

N-CHANNEL ENHANCEMENT MODE FIELD EFFECT TRANSISTOR

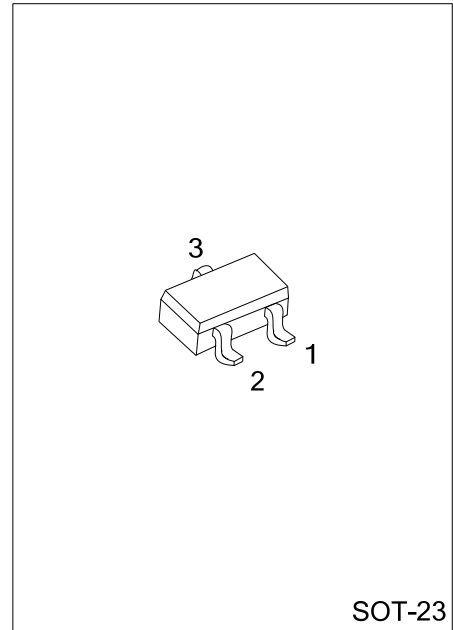
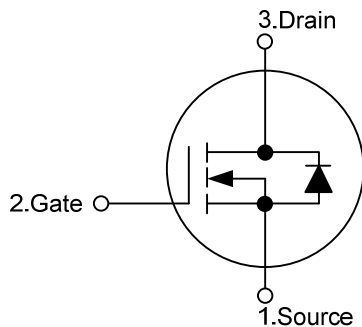
DESCRIPTION

The **UT3406** uses advanced trench technology to provide excellent $R_{DS(ON)}$, low gate charge and can be operated at low gate voltages. This device is perfect fit for use as a load switch or in PWM applications.

FEATURES

- * V_{DS} (V) = 30V
- * I_D = 3.6A (V_{GS} = 10V)
- * $R_{DS(ON)}$ < 65m Ω (V_{GS} = 10V)
- * $R_{DS(ON)}$ < 105m Ω (V_{GS} = 4.5V)
- * Halogen Free

SYMBOL

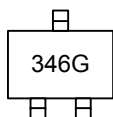


ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UT3406G-AE3-R	SOT-23	S	G	D	Tape Reel

UT3406G-AE3-R	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AE3: SOT-23
	(3)Lead Plating	(3) G: Halogen Free

MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V _{DSS}	30	V
Gate-Source Voltage	V _{GSS}	±20	
Continuous Drain Current (Ta=25°C)	I _D	3.6	A
Pulsed Drain Current (Note 2)	I _{DM}	15	A
Power Dissipation (Ta=25°C)	P _D	1.4	W
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°C

Note: 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. Pulse width limited by T_{J(MAX)}

■ THERMAL DATA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient	θ _{JA}		100	125	°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} =0 V, I _D =250 μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =24 V, V _{GS} =0 V			1	μA
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±20 V, V _{DS} =0 V			100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250 μA	1	1.9	3	V
On State Drain Current	I _{D(ON)}	V _{GS} =10 V, V _{DS} =5 V	15			A
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10 V, I _D =3.6 A		50	65	mΩ
		V _{GS} =4.5 V, I _D =2.8 A		75	105	mΩ
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =15V, V _{GS} =0 V, f=1MHz		288	375	pF
Output Capacitance	C _{OSS}			57		pF
Reverse Transfer Capacitance	C _{RSS}			39		pF
SWITCHING PARAMETERS						
Turn-ON Delay Time	t _{D(ON)}	V _{GS} =10V, V _{DS} =15V, R _L =2.2Ω, R _{GEN} =3Ω		4.6		ns
Turn-ON Rise Time	t _r			1.9		ns
Turn-OFF Delay Time	t _{D(OFF)}			20.1		ns
Turn-OFF Fall-Time	t _f			2.6		ns
Total Gate Charge	Q _G	V _{GS} =10 V, V _{DS} =15 V, I _D =3.6A		6.5	8.5	nC
Gate Source Charge	Q _{GS}			1.2		nC
Gate Drain Charge	Q _{GD}			1.6		nC
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage	V _{SD}	I _S =1 A		0.79	1	V
Maximum Body-Diode Continuous Current	I _S				2.5	A
Body Diode Reverse Recovery Time	t _{RR}	I _F =3.6A, dI/dt=100A/μs		10.2	14	ns
Body Diode Reverse Recovery Charge	Q _{RR}				3.5	

Note: Surface mounted on 1 in² copper pad of FR4 board

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