



UT7401

Power MOSFET

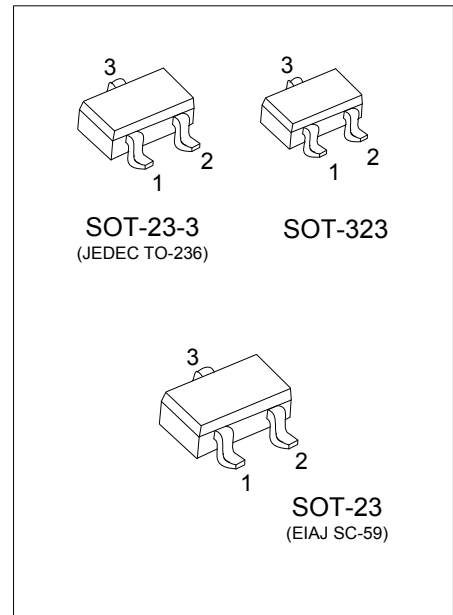
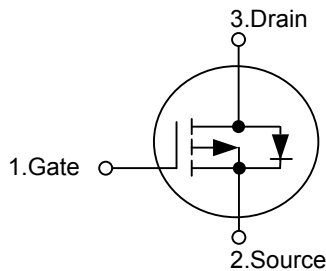
1.2A, 30V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

DESCRIPTION

The UTC **UT7401** is P-channel enhancement mode power MOSFET, designed in serried ranks. With fast switching speed, low on-resistance, favorable stabilization.

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

SYMBOL



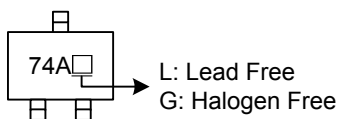
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT7401L-AE2-R	UT7401G-AE2-R	SOT-23-3	G	S	D	Tape Reel
UT7401L-AE3-R	UT7401G-AE3-R	SOT-23	G	S	D	Tape Reel
UT7401L-AL3-R	UT7401G-AL3-R	SOT-323	G	S	D	Tape Reel

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

<p>UT7401G-AE2-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, AL3: SOT-323</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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MARKING



■ 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}	±12	V
Continuous Drain Current (Note 2)	T _A =25°C	I _D	-1.2
	T _A =70°C		-1.0
Pulsed Drain Current (Note 3)	I _{DM}	-10	A
Power Dissipation (Note 2)	T _A =25°C	P _D	350
	T _A =70°C		220
Junction Temperature	T _J	+150	°C
Storage Temperature	T _{STG}	-55 ~ +150	°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 ≤300us, duty cycle ≤2%.

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note 2)	θ _{JA}	425	°C/W

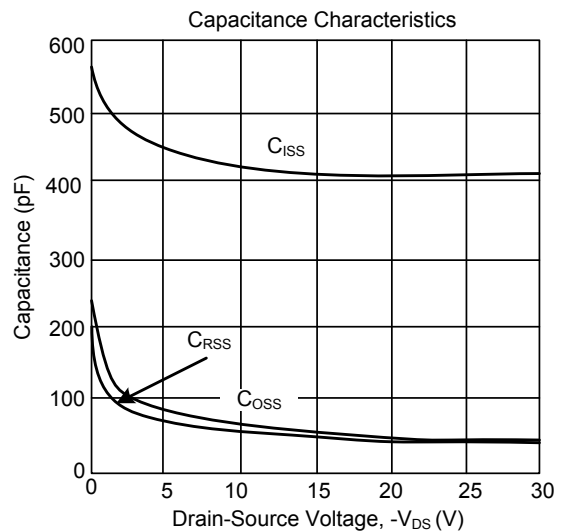
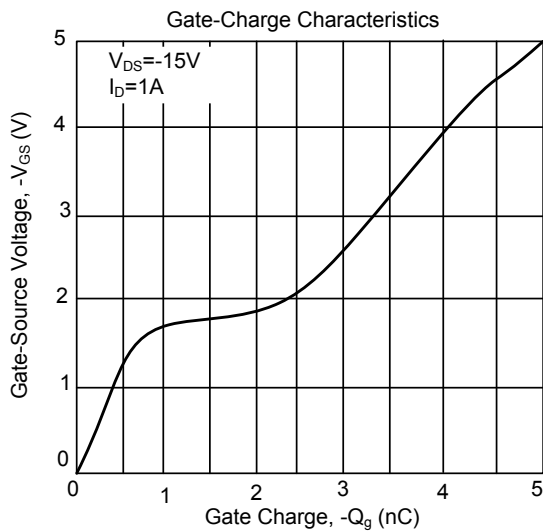
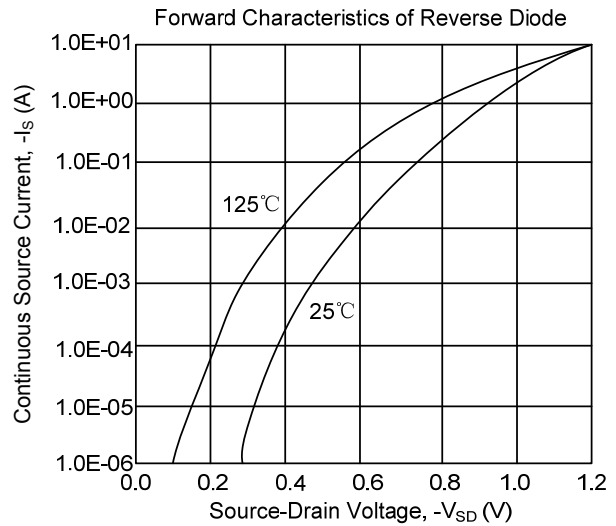
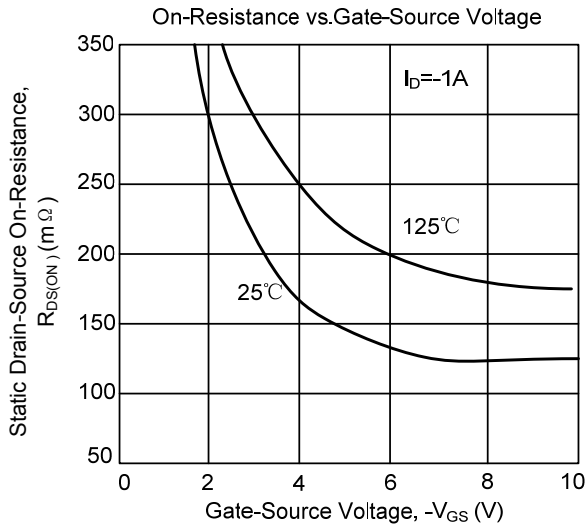
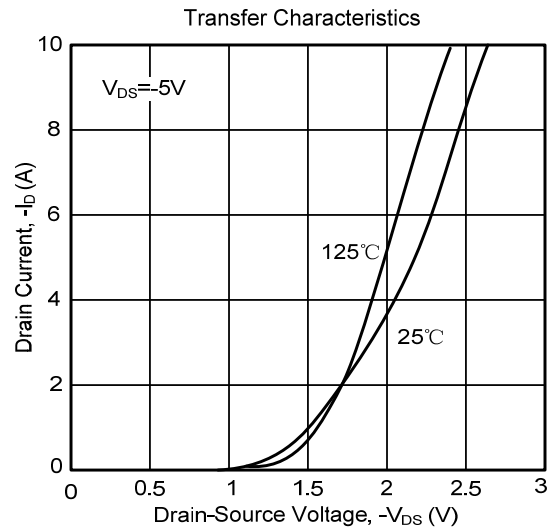
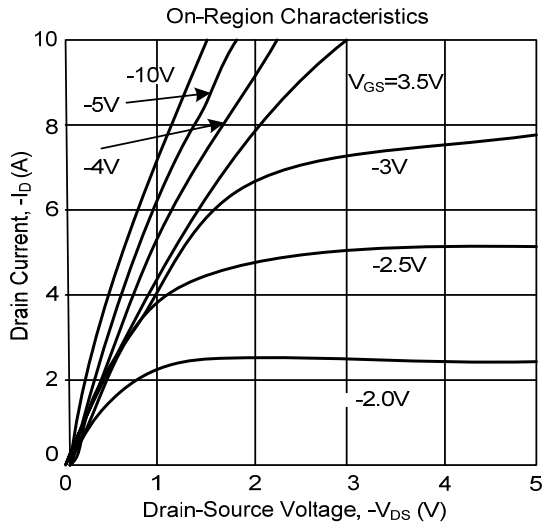
■ ELECTRICAL CHARACTERISTICS (T_J=25°C, unless otherwise specified)

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} =±12V			±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250uA	-0.6	-1	-1.4	V
Drain-Source On-State Resistance (Note 1)	R _{DS(ON)}	V _{GS} =-10V, I _D =-1.2A		122	150	mΩ
		V _{GS} =-4.5V, I _D =-1.2A		147	200	mΩ
		V _{GS} =-2.5V, I _D =-1.0A		207	280	mΩ
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		409		pF
Output Capacitance	C _{OSS}			55		pF
Reverse Transfer Capacitance	C _{RSS}			42		pF
SWITCHING CHARACTERISTICS						
Total Gate Charge (Note 1)	Q _G	V _{DS} =-15V, V _{GS} =-4.5V, I _D =-1A		5.06		nC
Gate-Source Charge	Q _{GS}			0.72		nC
Gate-Drain Charge	Q _{GD}			1.58		nC
Turn-ON Delay Time (Note 1)	t _{D(ON)}	V _{DS} =-15V, V _{GS} =-10V, R _G =3Ω, R _L =15Ω		6.2		ns
Turn-ON Rise Time	t _R			3.2		ns
Turn-OFF Delay Time	t _{D(OFF)}			41.2		ns
Turn-OFF Fall Time	t _F			14.5		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Continuous Drain-Source Diode Forward Current	I _S				-0.5	A
Drain-Source Diode Forward Voltage(Note2)	V _{SD}	V _{GS} =0V, I _S =-1A		-0.85	-1	V

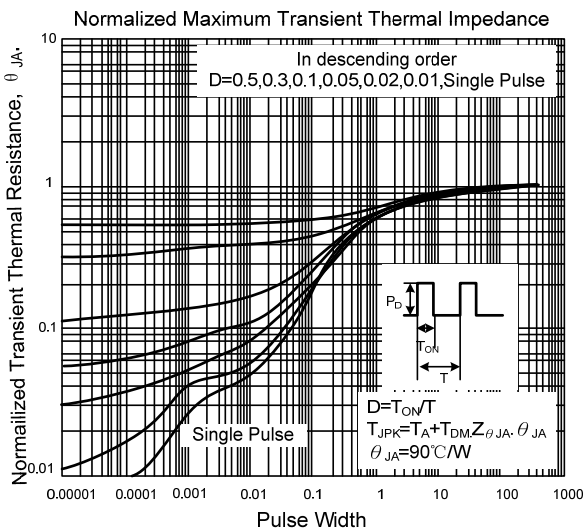
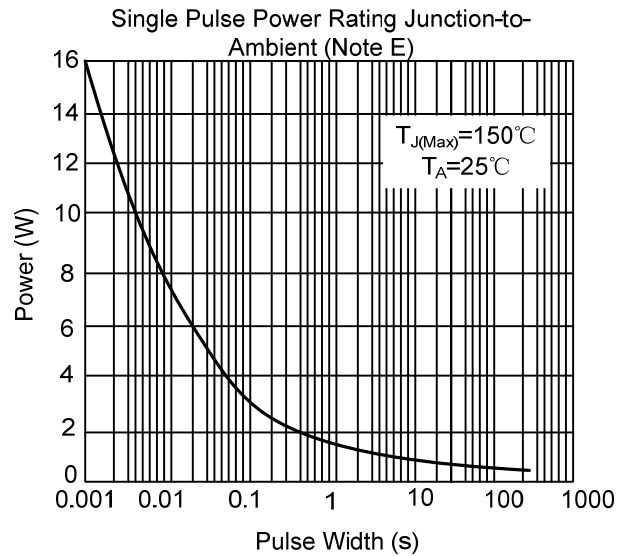
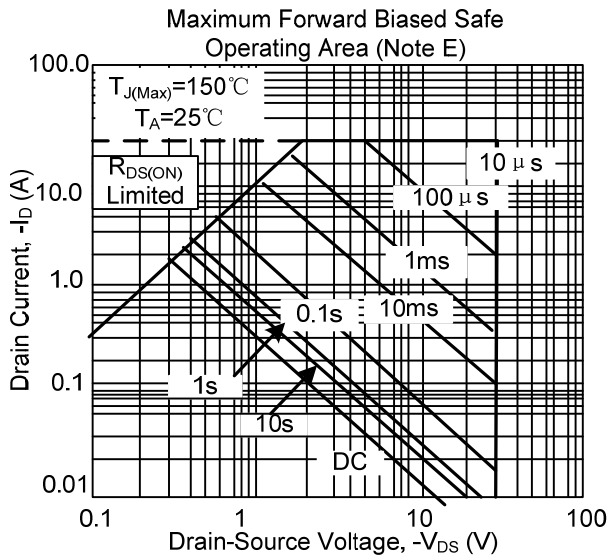
Notes: 1. Pulse width ≤300us, duty cycle ≤2%.

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

TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS(Cont.)



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