



UT7401

Power MOSFET

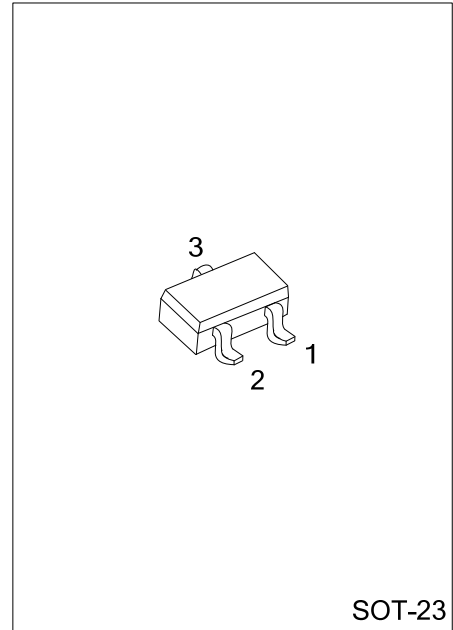
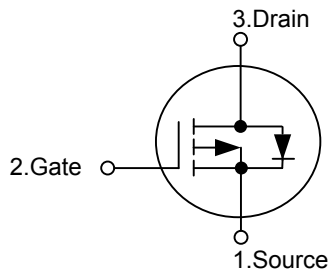
P-CHANNEL ENHANCEMENT MODE

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

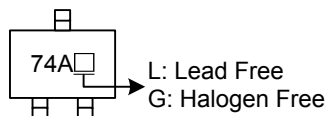


ORDERING INFORMATION

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

<p>UT7401L-AE3-R</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS (Ta = 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 1)	T _A =25°C	-1.2	A
	T _A =70°C	-1.0	A
Pulsed Drain Current (Note 2)	I _{DM}	-10	A
Power Dissipation (Note 1)	T _A =25°C	350	mW
	T _A =70°C	220	mW
Junction Temperature	T _J	+150	°C
Storage 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 DATA

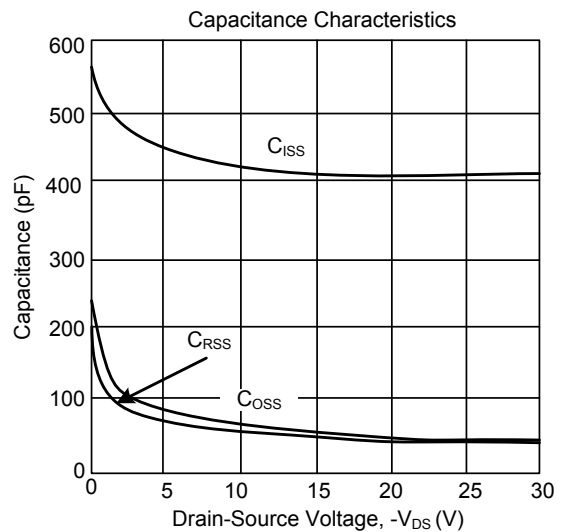
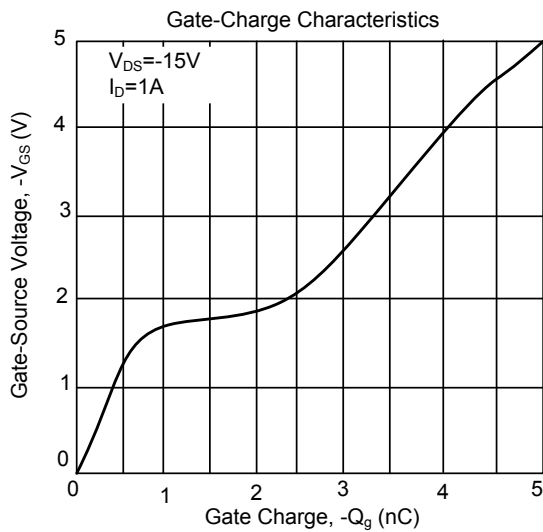
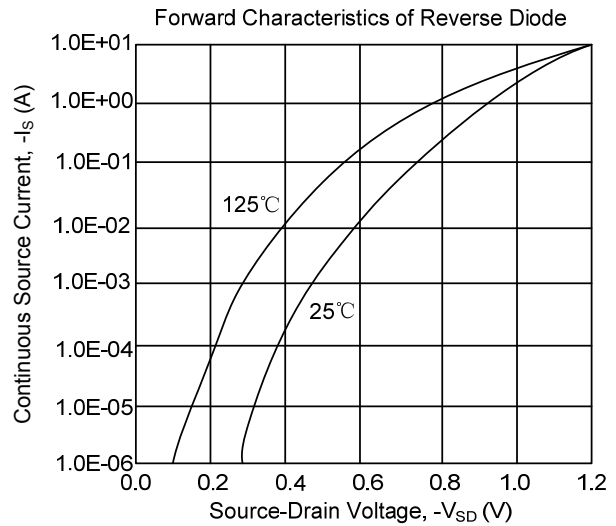
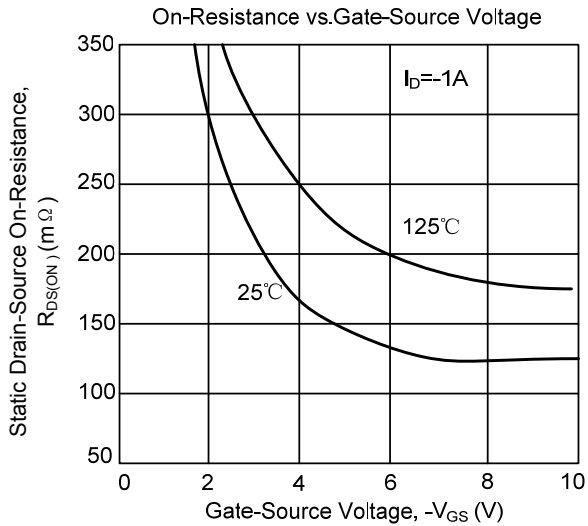
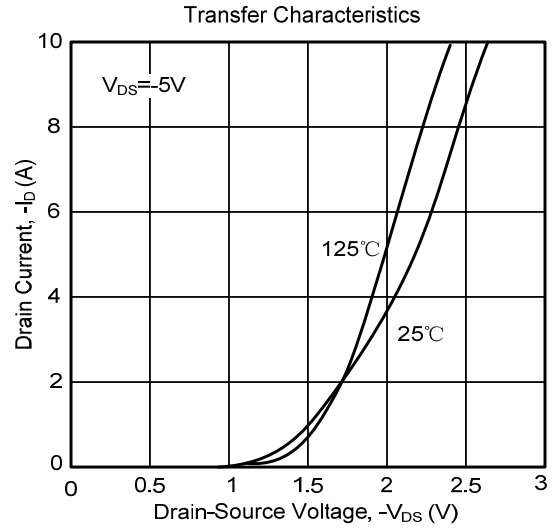
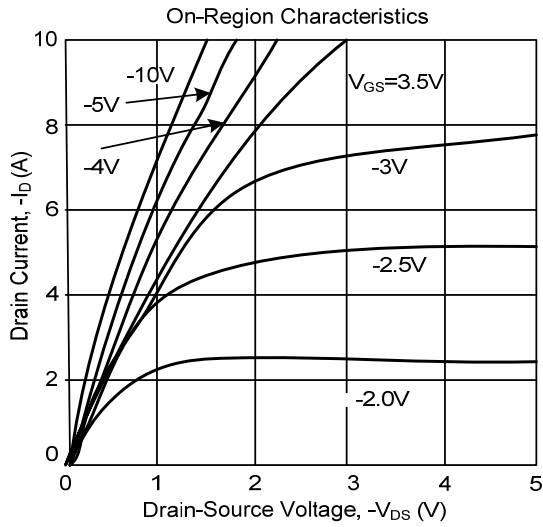
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note 1)	θ _{JA}		350	425	°C/W

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

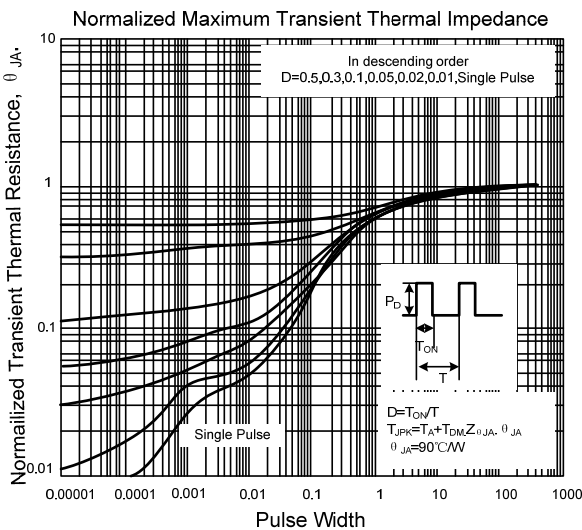
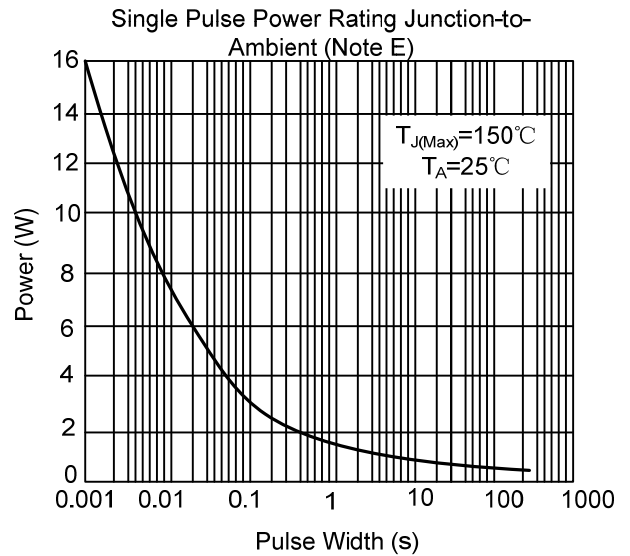
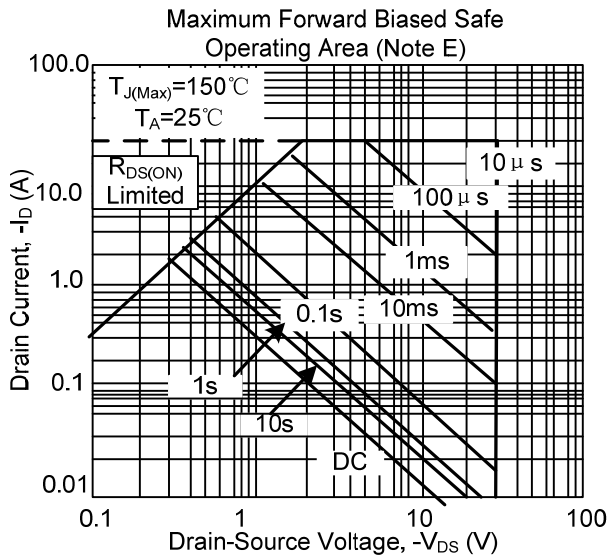
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =-250uA	-30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V			-1	uA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =-24V, V _{GS} =±12V			±10	nA
ON 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 2)	R _{DS(ON)}	V _{GS} =-10V, I _D =-1.2A		122	150	mΩ
		V _{GS} =-4.5V, I _D =-1.0A		147	200	mΩ
		V _{GS} =-2.5V, I _D =-1.2A		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						
Turn-ON Delay Time (Note 2)	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
Total Gate Charge (Note 2)	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
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Drain-Source Diode Forward Voltage(Note2)	V _{SD}	V _{GS} =0V, I _S =-1A		-0.85	-1	V
Maximum Continuous Drain-Source Diode Forward Current	I _S				-0.5	A

Notes: 1. Pulse width limited by T_{J(MAX)}
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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