



UM6K1N

Power MOSFET

SILICON N-CHANNEL MOSFET

DESCRIPTION

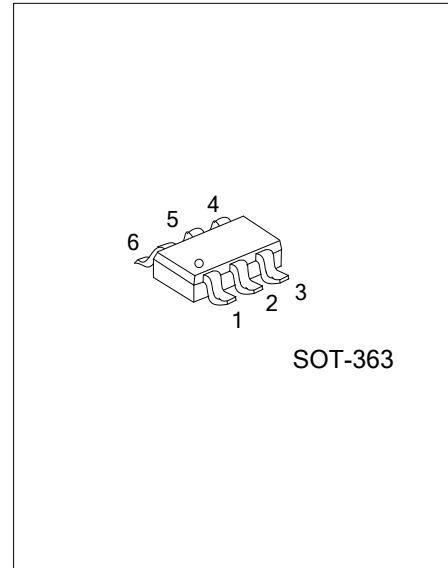
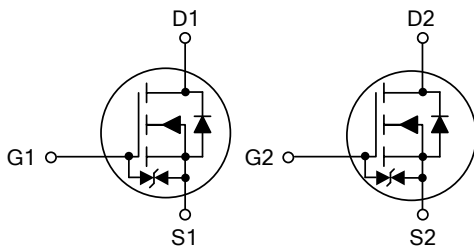
The UTC **UM6K1N** is a silicon N-channel MOSFET. it uses UTC's advanced technology to provide the customers with a minimum on state resistance, high switching speed and low gate threshold voltage.

The UTC **UM6K1N** is suitable for switching and interfacing applications.

FEATURES

- * $R_{DS(on)} \leq 8.0 \Omega @ V_{GS}=4V, I_D=10mA$
- * $R_{DS(on)} \leq 13 \Omega @ V_{GS}=2.5V, I_D=1.0mA$
- * High switching speed
- * Low gate threshold voltage

SYMBOL



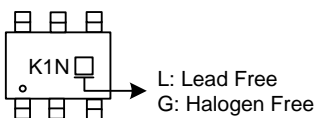
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
UM6K1NL-AL6-R	UM6K1NG-AL6-R	SOT-363	S1	G1	D2	S2	G2	D1	Tape Reel

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

<p>UM6K1NG-AL6-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Green Package 	<ul style="list-style-type: none"> (1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free and Lead Free, L: Lead Free
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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}	20	V
			-12	V
Drain Current	Continuous	I _D	100	mA
	Pulsed (Note 1)	I _{DM}	200	mA
Power Dissipation (Note 2)	T _C =25°C	P _D	150	mW
Channel Temperature		T _{CH}	150	°C
Storage Temperature Range		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.

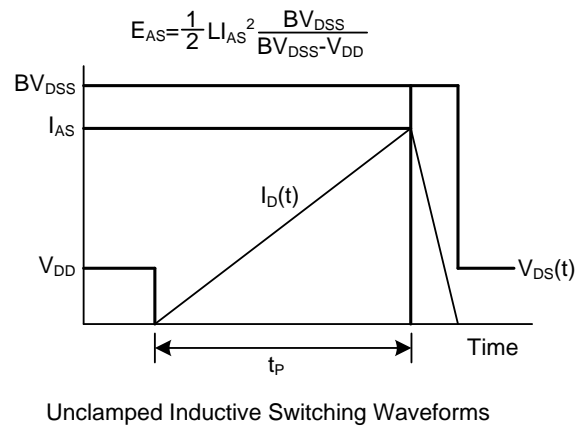
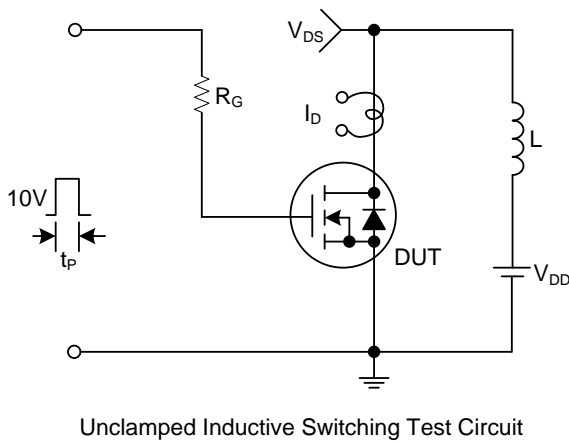
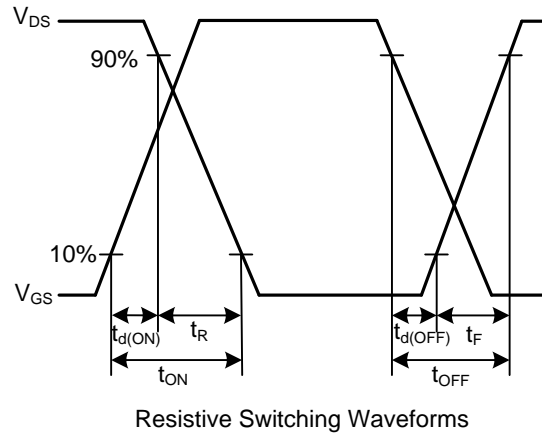
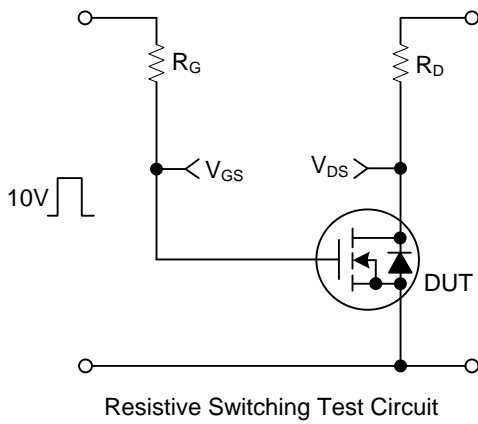
2. P_w ≤ 10μs, Duty cycle ≤ 50%.

3. With each pin mounted on the recommended lands.

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

PARAMETER		SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
OFF CHARACTERISTICS								
Drain-Source Breakdown Voltage		BV _{DSS}	I _D =10μA, V _{GS} =0V	30			V	
Drain-Source Leakage Current		I _{DSS}	V _{DS} =30V, V _{GS} =0V			1.0	μA	
Gate-Source Leakage Current	Forward	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			+5	μA	
	Reverse		V _{GS} =-12V, V _{DS} =0V			-5	μA	
ON CHARACTERISTICS								
Gate Threshold Voltage		V _{GS(TH)}	V _{DS} =3V, I _D =100μA	0.8		1.5	V	
Static Drain-Source On-State Resistance		R _{DS(ON)}	V _{GS} =4V, I _D =10mA		5	8	Ω	
			V _{GS} =2.5V, I _D =1mA		7	13	Ω	
Forward Transfer Admittance		Y _{FS}	V _{DS} =3V, I _D =10mA	20			mS	
DYNAMIC PARAMETERS								
Input Capacitance		C _{ISS}	V _{GS} =0V, V _{DS} =5V, f=1.0MHz		13		pF	
Output Capacitance		C _{OSS}				9		pF
Reverse Transfer Capacitance		C _{RSS}				4		pF
SWITCHING PARAMETERS								
Turn-ON Delay Time		t _{D(ON)}	V _{DD} ≈5V, V _{GS} =5V, I _D =10mA, R _{GS} =10Ω, R _L =500Ω		15		ns	
Rise Time		t _R				35		ns
Turn-OFF Delay Time		t _{D(OFF)}				80		ns
Fall-Time		t _F				80		ns

■ TEST CIRCUITS AND WAVEFORMS



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