



UK3019

Preliminary

Power MOSFET

2.5V DRIVE SILICON
N-CHANNEL MOSFET

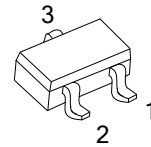
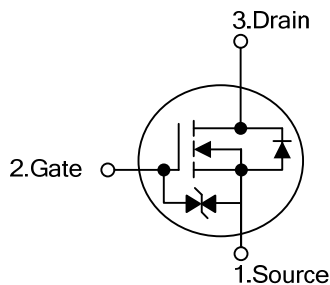
■ DESCRIPTION

The UTC **UK3019** is a silicon N-channel MOSFET which has been designed to minimize on-state resistance while it provides rugged, reliable and fast switching performance. The product is particularly suited for low voltage, low current applications such as small servo motor controller, power MOSFET gate drivers, and other switching applications.

■ FEATURES

- * Min $V_{DS} = 30V$
- * $R_{DS(ON)} = 5\Omega (V_{GS}=4V)$
- * $R_{DS(ON)} = 7\Omega (V_{GS}=2.5V)$
- * Pulsed $I_D = 400mA$
- * Low Voltage Drive (2.5V)

■ SYMBOL



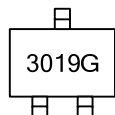
SOT-23-3
(JEDEC TO-236)

■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UK3019G-AE2-R	SOT-23-3	S	G	D	Tape Reel

UK3019G-AE2-R	(1)Packing Type (2)Package Type (3)Halogen Free	(1) R: Tape Reel (2) AE2: SOT-23-3 (3) G: Halogen Free
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■ MARKING



■ **ABSOLUTE MAXIMUM RATING** (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current	Continuous	I_D	100
	Pulsed (Note 2)	I_{DP}	400
Power Dissipation (Note 3)	P_D	200	mW
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. $P_w \leq 10\mu s$, Duty cycle $\leq 50\%$

3. With each pin mounted on the recommended lands.

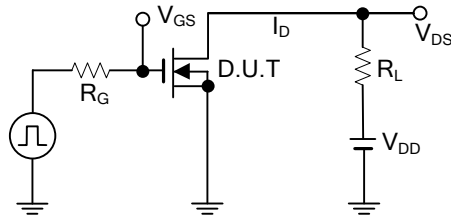
■ **THERMAL DATA**

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	625	°C/W

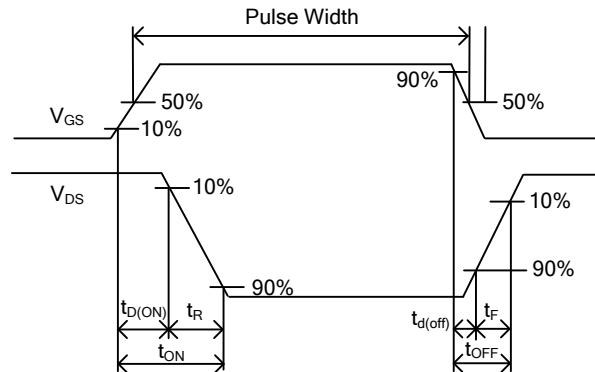
■ **ELECTRICAL CHARACTERISTICS** (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =10μA	30			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1.0	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±1	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)}	I _D = 10mA, V _{GS} = 4V		5	8	Ω
		I _D = 1mA, V _{GS} = 2.5V		7	13	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =5V, V _{GS} =0V, f = 1MHz		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 _{GS} = 5V, V _{DD} ≈5V I _D = 10mA, R _L = 500Ω, R _G = 10Ω		15		ns
Turn-ON Rise Time	t _R			35		ns
Turn-OFF Delay Time	t _{D(OFF)}			80		ns
Turn-OFF Fall-Time	t _F			80		ns

■ TEST CIRCUITS AND WAVEFORMS



Switching Time Measurement Circuit



Switching Time Waveforms

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