



UT06N02LZ

Preliminary

Power MOSFET

0.6A ,20V N-CHANNEL LOGIC LEVEL ENHANCEMENT MODE

DESCRIPTION

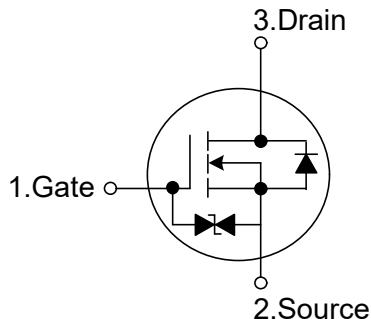
The **UT06N02LZ** employs advanced MOSFET technology and features low gate charge while maintaining low on-resistance.

Optimized for switching applications, this device improves the overall efficiency of DC/DC converters and allows operation to higher switching frequencies.

FEATURES

- * $R_{DS(ON)} \leq 0.6 \Omega$ @ $V_{GS} = 4.5V$, $I_D = 600mA$
- $R_{DS(ON)} \leq 0.8 \Omega$ @ $V_{GS} = 2.5V$, $I_D = 300mA$
- $R_{DS(ON)} \leq 1.2 \Omega$ @ $V_{GS} = 1.8V$, $I_D = 300mA$
- * Low Capacitance
- * Low Gate Charge
- * Fast Switching Capability
- * Green & Pb Free

SYMBOL

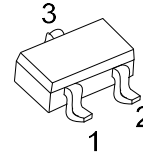


ORDERING INFORMATION

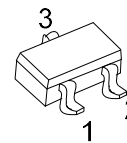
Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
UT06N02LZG-AL3-R	SOT-323	G	S	D	Tape Reel
UT06N02LZG-AN3-R	SOT-523	G	S	D	Tape Reel

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

UT06N02LZG-AL3-R	(1) Packing Type (2) Package Type (3) Green Package	(1) R: Tape Reel (2) AL3: SOT-323, AN3: SOT-523 (3) G: Halogen Free and Lead Free
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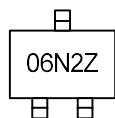


SOT-323



SOT-523

■ **MARKING**



■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current	DC	I_D	0.6	A
	Pulse		1.2	A
Power Dissipation	SOT-323	P_D	0.2	W
	SOT-523		0.15	W
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-55 ~ +150	$^{\circ}\text{C}$

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	RATINGS	UNIT
Junction to Ambient	SOT-323	θ_{JA}	625	$^{\circ}\text{C/W}$
	SOT-523		833	$^{\circ}\text{C/W}$

Note: Device mounted on FR-4 substrate P_c board, 2oz copper, with 1inch square copper plate.

■ ELECTRICAL CHARACTERISTICS ($T_A = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V			1	μA
Gate–Body Leakage, Forward	I _{GSS}	V _{DS} =0V, V _{GS} =±8V			±10	uA
ON CHARACTERISTICS (Note)						
Gate-Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	0.3		1.2	V
Static Drain–Source On–Resistance	R _{DS(ON)}	V _{GS} =4.5V, I _D =600mA			0.6	Ω
		V _{GS} =2.5V, I _D =300mA			0.8	Ω
		V _{GS} =1.8V, I _D =300mA			1.2	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{DS} =10V, V _{GS} =0V, f=1MHz		21		pF
Output Capacitance	C _{OSS}			13		pF
Reverse Transfer Capacitance	C _{RSS}			8		pF
SWITCHING PARAMETERS (Note)						
Total Gate Charge	Q _G	V _{DS} =16V, V _{GS} =8V, I _D =0.6A		8		nC
Gate Source Charge	Q _{GS}			0.7		nC
Gate Drain Charge	Q _{GD}			0.9		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =10V, I _D =0.6A, V _{GS} =8V, R _G =3Ω		2		ns
Turn-ON Rise Time	t _R			18		ns
Turn-OFF Delay Time	t _{D(OFF)}			28		ns
Turn-OFF Fall-Time	t _F			25		ns
SOURCE- DRAIN DIODE RATINGS AND CHARACTERISTICS						
Max. Diode Forward Current	I _S				0.6	A
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =0.6A			1.2	V

Notes: 1. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.

2. Essentially independent of operating temperature.

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