



UT2P02VZ

Preliminary

Power MOSFET

2.0A, 20V P-CHANNEL LOGIC LEVEL ENHANCEMENT MODE

■ DESCRIPTION

The **UT2P02VZ** 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

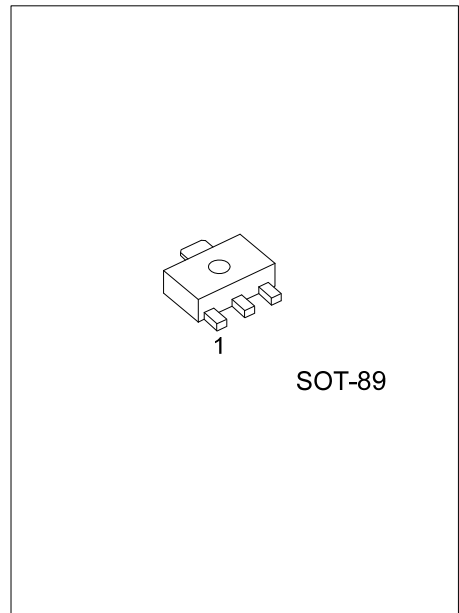
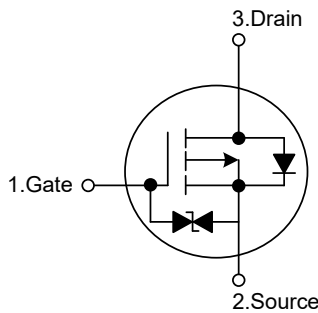
* $R_{DS(ON)} \leq 0.19 \Omega @ V_{GS} = -4.5V, I_D = -1.0A$

$R_{DS(ON)} \leq 0.32 \Omega @ V_{GS} = -2.5V, I_D = -0.7A$

* Low Capacitance

* Low Gate Charge

■ SYMBOL



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UT2P02VZL-AB3-R	UT2P02VZG-AB3-R	SOT-89	G	D	S	Tape Reel

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

<p>UT2P02VZG-AB3-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) AB3: SOT-89 (3) G: Halogen Free and Lead Free, L: Lead Free
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■ MARKING

SOT-89	SOT-523

■ ABSOLUTE MAXIMUM RATINGS (T_C=25°C unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT	
Drain-Source Voltage	V _{DSS}	-20	V	
Gate-Source Voltage	V _{GSS}	±10	V	
Continuous Drain Current	I _D	DC	-2	A
		Pulse	-4	A
Power Dissipation	P _D	1.8	W	
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	RATINGS	UNIT
Junction to Ambient	θ _{JA}	125	°C/W

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

■ 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 =-250μA	-20			V
Drain-Source Leakage Current	I _{DSS}	V _{DS} =-20V, V _{GS} =0V			-1	μA
Gate-Source Leakage Current	Forward	V _{GS} =±10V, V _{DS} =0V			±10	μA
	Reverse					
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =-250μA	-0.5		-1.5	V
Static Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-1.0A			0.19	Ω
		V _{GS} =-2.5V, I _D =-0.7A			0.32	Ω
DYNAMIC PARAMETERS						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-10V, f=1.0MHz		130		pF
Output Capacitance	C _{OSS}			61		pF
Reverse Transfer Capacitance	C _{RSS}			26		pF
SWITCHING PARAMETERS						
Total Gate Charge (Note 1)	Q _G	V _{DS} =-16V, V _{GS} =-10V, I _D =-2.0A (Note 1, 2)		9		nC
Gate to Source Charge	Q _{GS}			1		nC
Gate to Drain Charge	Q _{GD}			1		nC
Turn-ON Delay Time	t _{D(ON)}	V _{DD} =-10V, V _{GS} =-10V, I _D =-2.0A, R _G =3Ω (Note 1, 2)		8		ns
Rise Time	t _R			38		ns
Turn-OFF Delay Time	t _{D(OFF)}			739		ns
Fall-Time	t _F			475		ns
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS						
Maximum Body-Diode Continuous Current	I _S				-2	A
Diode Forward Voltage	V _{SD}	I _F =-2.0A, V _{GS} =0V			-1.4	V

Notes: 1. Pulse Test: Pulse width ≤ 300μs, Duty cycle ≤ 2%.

2. Essentially independent of operating temperature.

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