

RTU002P02

Silicon P-channel MOS FET

- 1) Low On-resistance.
- 2) Low voltage drive (2.5V drive).

Switching

Type	Package	Taping
	Code	T106
	Basic ordering unit (pieces)	3000
RTU002P02		○

The drawing shows the mechanical specifications for a UMT3 component. The top view is a rectangle with overall dimensions of 2.0 by 2.1. It features three leads: a central lead labeled (S) with a width of 0.3, and two side leads labeled (G) and (D) with widths of 0.65 each. The distance between the centers of the side leads is 1.3. The side view shows the component's profile with a total height of 0.9. The central lead has a height of 0.7, and the side leads have a height of 0.2. The base of the component has a thickness of 0.15. A note indicates that each lead has the same dimensions. The abbreviated symbol is given as TW.

UMT3

Each lead has same dimensions

Abbreviated symbol : TW

The diagram shows a MOSFET symbol with an ESD protection diode and a body diode. The gate is connected to a terminal labeled (2). The source is connected to a terminal labeled (1). The drain is connected to a terminal labeled (3). An ESD protection diode, labeled *1, is connected between the gate and the source. A body diode, labeled *2, is connected between the drain and the source.

(1) Source
(2) Gate
(3) Drain

*1 ESD PROTECTION DIODE
*2 BODY DIODE

Parameter		Symbol	Limits	Unit
Drain-source voltage		V_{DSS}	-20	V
Gate-source voltage		V_{GSS}	± 12	V
Drain current	Continuous	I_D	± 0.25	A
	Pulsed	I_{DP} *1	± 0.5	A
Total power dissipation		P_D *2	0.2	W
Channel temperature		T_{ch}	150	°C
Range of storage temperature		T_{stg}	-55 to +150	°C

*1 $P_w \leq 10 \mu s$, Duty cycle $\leq 1\%$

*2 Each terminal mounted on a recommended land

Parameter	Symbol	Limits	Unit
Channel to ambient	Rth(ch-a) *	625	°C/W

* Each terminal mounted on a recommended land

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Gate-source leakage	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 12V, V_{DS} = 0V$
Drain-source breakdown voltage	$V_{(BR) DSS}$	−20	—	—	V	$I_D = -1mA, V_{GS} = 0V$
Zero gate voltage drain current	I_{DSS}	—	—	−1	μA	$V_{DS} = -20V, V_{GS} = 0V$
Gate threshold voltage	$V_{GS(th)}$	−0.7	—	−2.0	V	$V_{DS} = -10V, I_D = -1mA$
Static drain-source on-state resistance	$R_{DS(on)}$ *	—	1.0	1.5	Ω	$I_D = -0.25A, V_{GS} = -4.5V$
		—	1.1	1.6	Ω	$I_D = -0.25A, V_{GS} = -4V$
		—	2.0	3.0	Ω	$I_D = -0.15A, V_{GS} = -2.5V$
Forward transfer admittance	$ Y_{fs} $ *	0.2	—	—	S	$V_{DS} = -10V, I_D = -0.15A$
Input capacitance	C_{iss}	—	50	—	pF	$V_{DS} = -10V$
Output capacitance	C_{oss}	—	5	—	pF	$V_{GS} = 0V$
Reverse transfer capacitance	C_{rss}	—	5	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$ *	—	9	—	ns	$V_{DD} \doteq -15V$
Rise time	t_r *	—	6	—	ns	$I_D = -0.15A$
Turn-off delay time	$t_{d(off)}$ *	—	35	—	ns	$V_{GS} = -4.5V$
Fall time	t_f *	—	45	—	ns	$R_L = 100\Omega$ $R_G = 10\Omega$

*Pulsed

●Body diode characteristics (Source-drain) (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Forward voltage	V_{SD}	—	—	−1.2	V	$I_S = -0.1A, V_{GS} = 0V$

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