

μPA677TB

DESCRIPTION

The μPA677TB is a switching device which can be driven directly by a 2.5 V power source.

The μPA677TB features a low on-state resistance and excellent switching characteristics, and is suitable for applications such as power switch of portable machine and so on.

FEATURES

- 2.5 V drive available
- Low on-state resistance
 - $R_{DS(on)1} = 0.57 \Omega \text{ MAX. (} V_{GS} = 4.5 \text{ V, } I_D = 0.30 \text{ A)}$
 - $R_{DS(on)2} = 0.60 \Omega \text{ MAX. (} V_{GS} = 4.0 \text{ V, } I_D = 0.30 \text{ A)}$
 - $R_{DS(on)3} = 0.88 \Omega \text{ MAX. (} V_{GS} = 2.5 \text{ V, } I_D = 0.15 \text{ A)}$
- Two MOS FET circuits in same size package as SC-70

ORDERING INFORMATION

PART NUMBER	PACKAGE
μPA677TB	SC-88 (SSP)

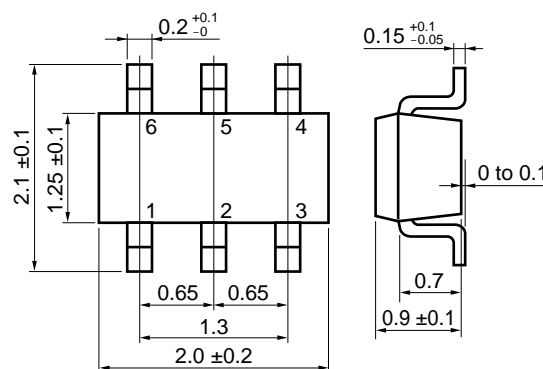
Marking: WA

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

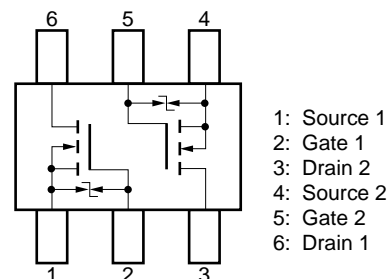
Drain to Source Voltage (V _{GS} = 0 V)	V _{DSS}	20	V
Gate to Source Voltage (V _{DS} = 0 V)	V _{GSS}	±12	V
Drain Current (DC)	I _{D(DC)}	±0.35	A
Drain Current (pulse) ^{Note1}	I _{D(pulse)}	±1.40	A
Total Power Dissipation(2units) ^{Note2}	P _T	0.2	W
Channel Temperature	T _{ch}	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

- Notes**
1. $PW \leq 10 \mu s$, Duty Cycle $\leq 1\%$
 2. Mounted on FR-4 Board of 2500 mm² x 1.1 mm 2units total.

PACKAGE DRAWING (Unit: mm)



PIN CONNECTUON (Top View)



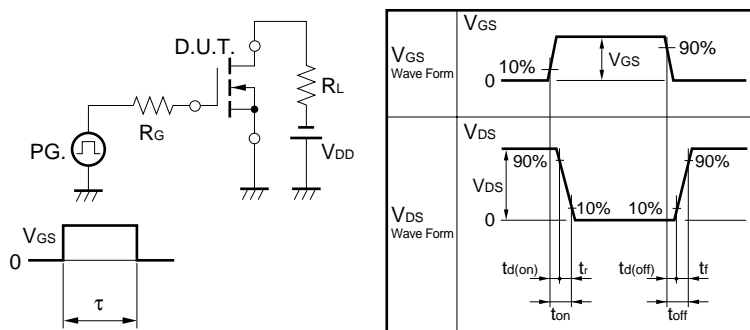
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ELECTRICAL CHARACTERISTICS (TA = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20.0\text{ V}, V_{GS} = 0\text{ V}$			1.0	μA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 12.0\text{ V}, V_{DS} = 0\text{ V}$			± 10	μA
Gate Cut-off Voltage	$V_{GS(off)}$	$V_{DS} = 10.0\text{ V}, I_D = 1.0\text{ mA}$	0.5	1.0	1.5	V
Forward Transfer Admittance ^{Note}	$ y_{fs} $	$V_{DS} = 10.0\text{ V}, I_D = 0.30\text{ A}$	0.25	0.75		S
Drain to Source On-state Resistance ^{Note}	$R_{DS(on)1}$	$V_{GS} = 4.5\text{ V}, I_D = 0.30\text{ A}$		0.38	0.57	Ω
	$R_{DS(on)2}$	$V_{GS} = 4.0\text{ V}, I_D = 0.30\text{ A}$		0.41	0.60	Ω
	$R_{DS(on)3}$	$V_{GS} = 2.5\text{ V}, I_D = 0.15\text{ A}$		0.60	0.88	Ω
Input Capacitance	C_{iss}	$V_{DS} = 10.0\text{ V}$		28		pF
Output Capacitance	C_{oss}	$V_{GS} = 0\text{ V}$		11		pF
Reverse Transfer Capacitance	C_{rss}	$f = 1.0\text{ MHz}$		7		pF
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = 10.0\text{ V}, I_D = 0.30\text{ A}$		20		ns
Rise Time	t_r	$V_{GS} = 4.0\text{ V}$		51		ns
Turn-off Delay Time	$t_{d(off)}$	$R_G = 10\ \Omega$		94		ns
Fall Time	t_f			87		ns
Body Diode Forward Voltage ^{Note}	$V_{F(S-D)}$	$I_F = 0.35\text{ A}, V_{GS} = 0\text{ V}$		0.84		V

Note Pulsed $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$

TEST CIRCUIT SWITCHING TIME



$\tau = 1\ \mu\text{s}$
Duty Cycle $\leq 1\%$