

μPA1900

DESCRIPTION

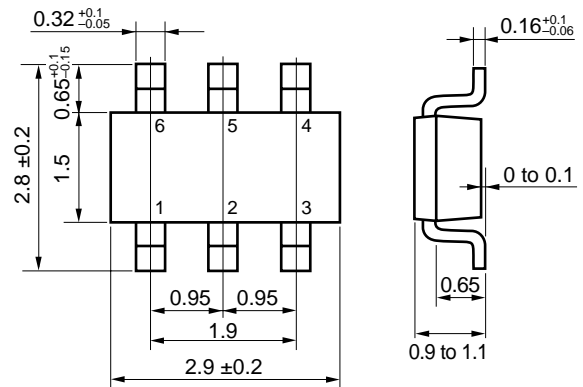
The μPA1900 is a switching device which can be driven directly by a 2.5 V power source.

The μPA1900 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

- Can be driven by a 2.5 V power source
- Low on-state resistance
 - $R_{DS(on)1} = 35 \text{ m}\Omega \text{ MAX. (} V_{GS} = 4.5 \text{ V, } I_D = 3.0 \text{ A)}$
 - $R_{DS(on)2} = 38 \text{ m}\Omega \text{ MAX. (} V_{GS} = 4.0 \text{ V, } I_D = 3.0 \text{ A)}$
 - $R_{DS(on)3} = 45 \text{ m}\Omega \text{ MAX. (} V_{GS} = 2.5 \text{ V, } I_D = 3.0 \text{ A)}$

PACKAGE DRAWING (Unit : mm)



1, 2, 5, 6 : Drain
3 : Gate
4 : Source

ORDERING INFORMATION

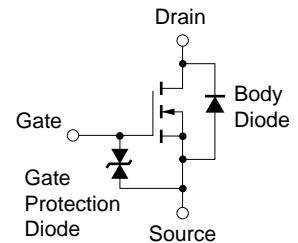
PART NUMBER	PACKAGE
μPA1900TE	6-pin Mini Mold (Thin Type)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Drain to Source Voltage	V _{DSS}	20	V
Gate to Source Voltage	V _{GSS}	±12	V
Drain Current (DC)	I _{D(DC)}	±5.5	A
Drain Current (pulse) ^{Note1}	I _{D(pulse)}	±22	A
Total Power Dissipation	P _{T1}	0.2	W
Total Power Dissipation ^{Note2}	P _{T2}	2	W
Channel Temperature	T _{ch}	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

- Notes 1.** PW ≤ 10 μs, Duty Cycle ≤ 1 %
2. Mounted on FR-4 Board, t ≤ 5 sec.

EQUIVALENT CIRCUIT



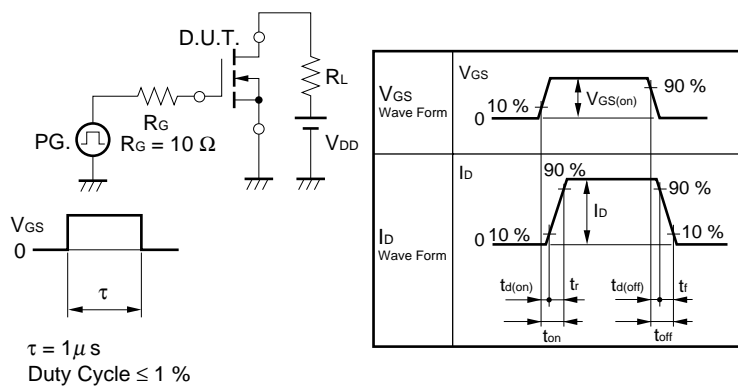
Marking: TG

μPA1900

★ ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20 V, V _{GS} = 0 V			10	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±12 V, V _{DS} = 0 V			±10	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 10 V, I _D = 1 mA	0.5	0.93	1.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} = 10 V, I _D = 3.0 A	3	9.2		S
Drain to Source On-state Resistance	R _{DS(on)1}	V _{GS} = 4.5 V, I _D = 3.0 A		28	35	mΩ
	R _{DS(on)2}	V _{GS} = 4.0 V, I _D = 3.0 A		29	38	mΩ
	R _{DS(on)3}	V _{GS} = 2.5 V, I _D = 3.0 A		37	45	mΩ
Input Capacitance	C _{iss}	V _{DS} = 10 V		595		pF
Output Capacitance	C _{oss}	V _{GS} = 0 V		222		pF
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz		133		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} = 10 V		61		ns
Rise Time	t _r	I _D = 3.0 A		172		ns
Turn-off Delay Time	t _{d(off)}	V _{GS(on)} = 4.0 V		220		ns
Fall Time	t _f	R _G = 10 Ω		293		ns
Total Gate Charge	Q _G	V _{DS} = 16 V		6.7		nC
Gate to Source Charge	Q _{GS}	I _D = 5.5 A		1.2		nC
Gate to Drain Charge	Q _{GD}	V _{GS} = 4.0 V		3.1		nC
Diode Forward Voltage	V _{F(S-D)}	I _F = 5.5 A, V _{GS} = 0 V		0.87		V

TEST CIRCUIT 1 SWITCHING TIME



TEST CIRCUIT 2 GATE CHARGE

