

To our customers,

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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N-CHANNEL MOS FIELD EFFECT TRANSISTOR
 FOR HIGH SPEED SWITCHING

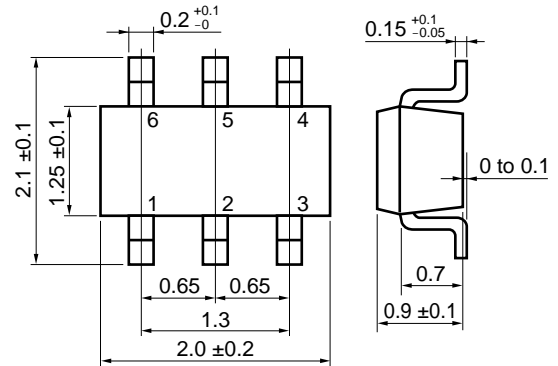
DESCRIPTION

The μ PA675T is an N-channel vertical MOS FET. Because it can be driven by a voltage as low as 1.5 V and it is not necessary to consider a drive current, this FET is ideal as an actuator for low-current portable systems such as headphone stereos and video cameras.

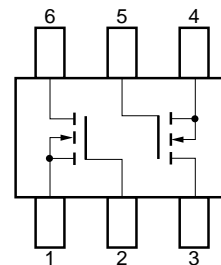
FEATURES

- Two MOS FET circuits in package the same size as SC-70
- Automatic mounting supported
- Gate can be driven by a 1.5 V power source
- Because of its high input impedance, there's no need to consider a drive current
- Since bias resistance can be omitted, the number of components required can be reduced

PACKAGE DRAWING (Unit: mm)



PIN CONNECTION



1. Source 1 (S1)
2. Gate 1 (G1)
3. Drain 2 (D2)
4. Source 2 (S2)
5. Gate 2 (G2)
6. Drain 1 (D1)

ORDERING INFORMATION

PART NUMBER	PACKAGE
μ PA675T ^{Note}	SC-88 (SSP)

Note Marking: SA

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Drain to Source Voltage (V _{GS} = 0 V)	V _{DSS}	16	V
Gate to Source Voltage (V _{DS} = 0 V)	V _{GSS}	±7.0	V
Drain Current (DC) (T _c = 25°C)	I _{D(DC)}	±0.1	A
Drain Current (pulse) ^{Note}	I _{D(pulse)}	±0.2	A
Total Power Dissipation (T _c = 25°C)	P _T	0.2	W
Channel Temperature	T _{ch}	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

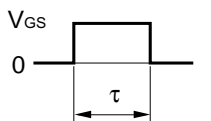
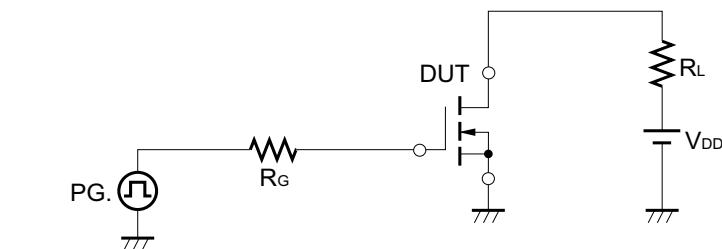
Note PW ≤ 10 ms, Duty Cycle ≤ 50%

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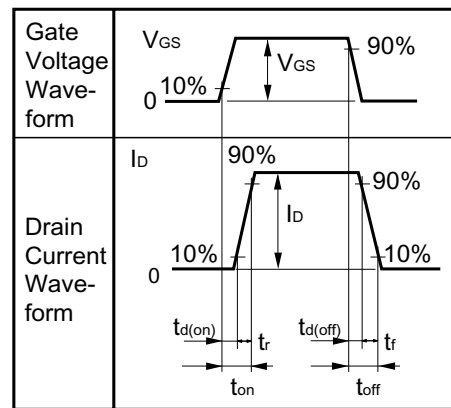
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 16 V, V _{GS} = 0 V			1.0	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±7.0 V, V _{DS} = 0 V			±3.0	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 3 V, I _D = 10 μA	0.5	0.8	1.1	V
Forward Transfer Admittance	y _{fs}	V _{DS} = 3 V, I _D = 10 mA	20			mS
Drain to Source On-state Resistance	R _{DS(on)1}	V _{GS} = 1.5 V, I _D = 1 mA		20	50	Ω
	R _{DS(on)2}	V _{GS} = 2.5 V, I _D = 10 mA		7	15	Ω
	R _{DS(on)3}	V _{GS} = 4.0 V, I _D = 10 mA		5	12	Ω
Input Capacitance	C _{iss}	V _{DS} = 3 V		10		pF
Output Capacitance	C _{oss}	V _{GS} = 0 V		13		pF
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz		3		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} = 3 V, I _D = 10 mA		15		ns
Rise Time	t _r	V _{GS} = 3 V		70		ns
Turn-off Delay Time	t _{d(off)}	R _G = 10 Ω		100		ns
Fall Time	t _f			110		ns

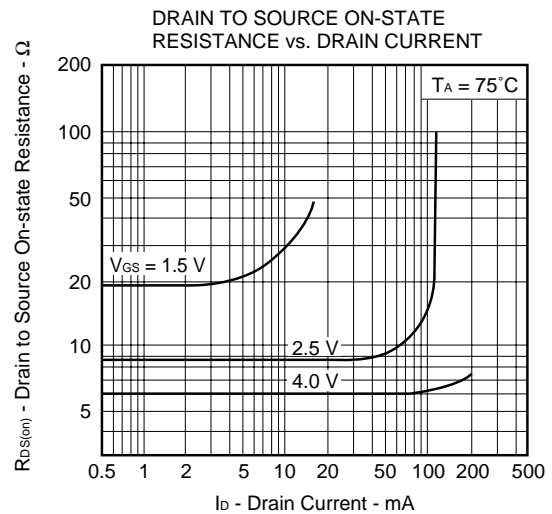
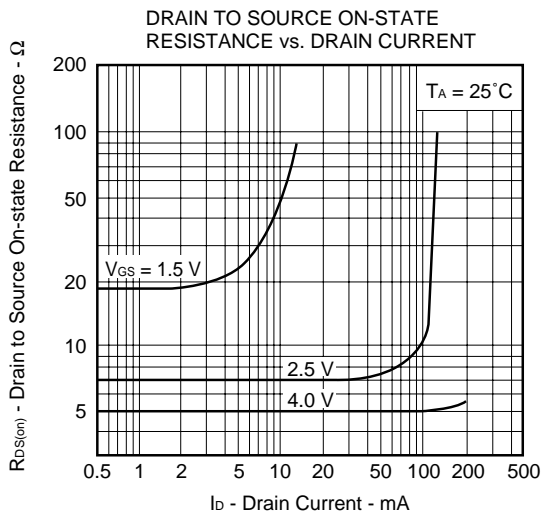
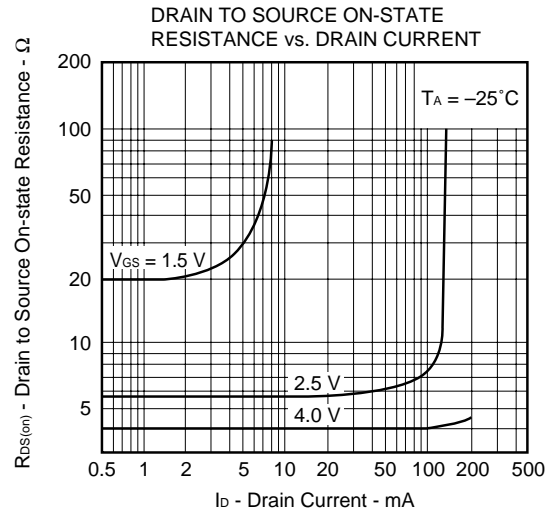
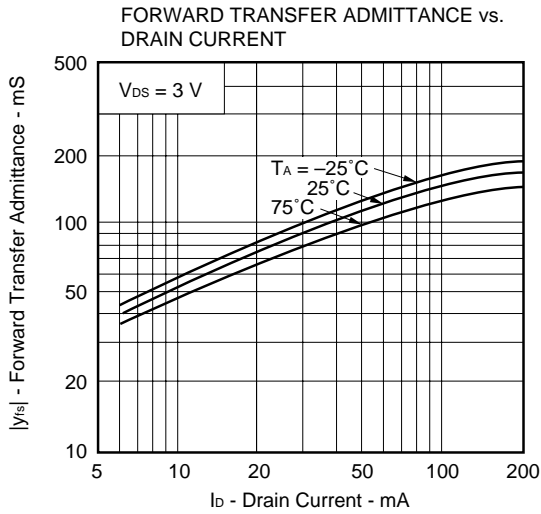
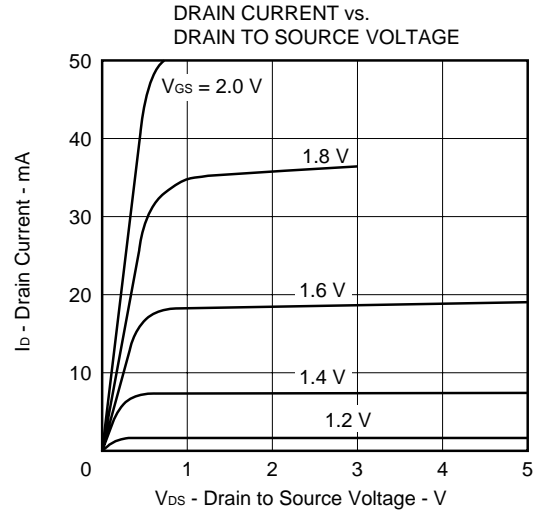
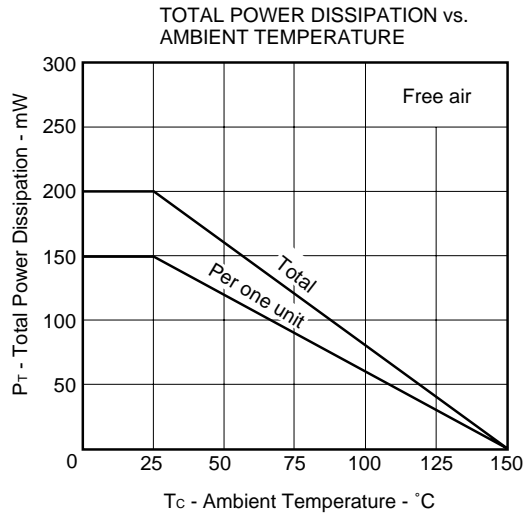
SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS

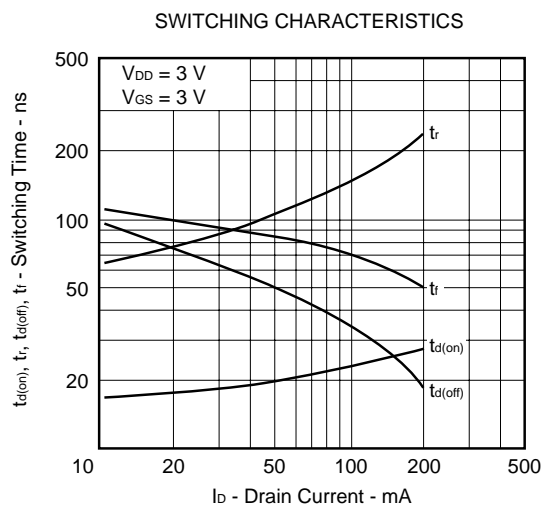
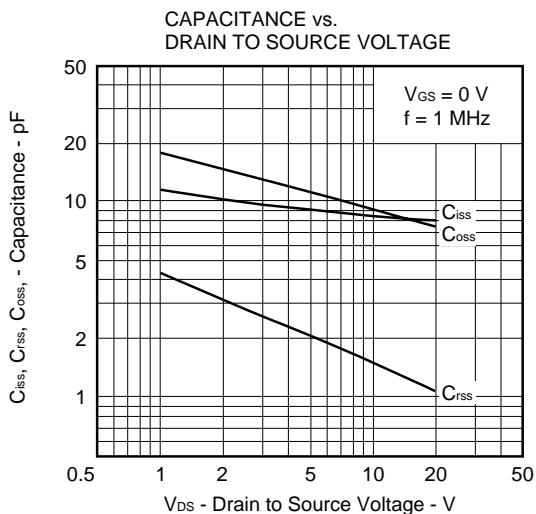
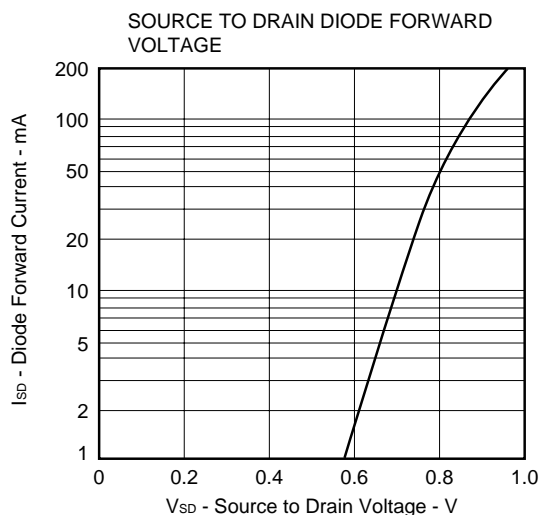
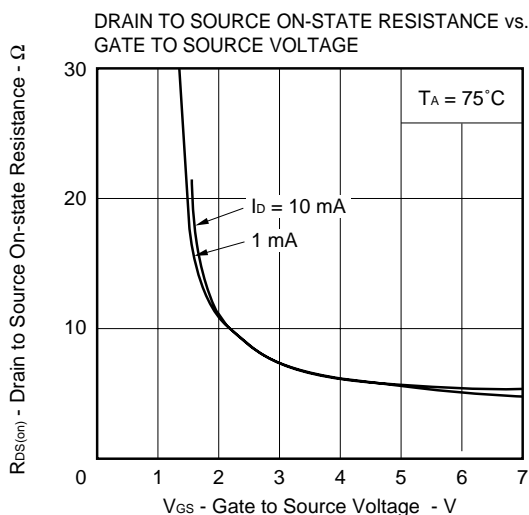
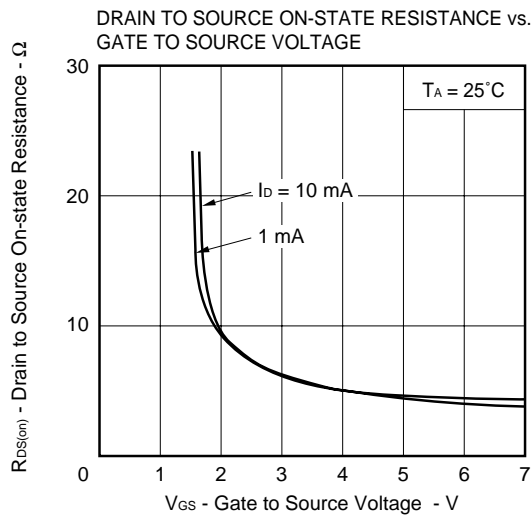
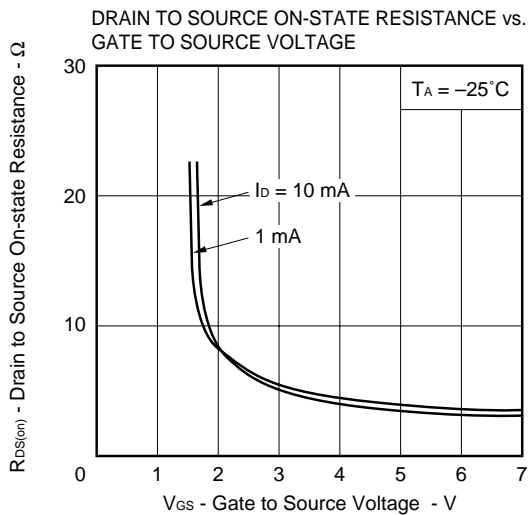


τ = 1 μs
Duty Cycle ≤ 1%



TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)





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