

To our customers,

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## Old Company Name in Catalogs and Other Documents

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

April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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

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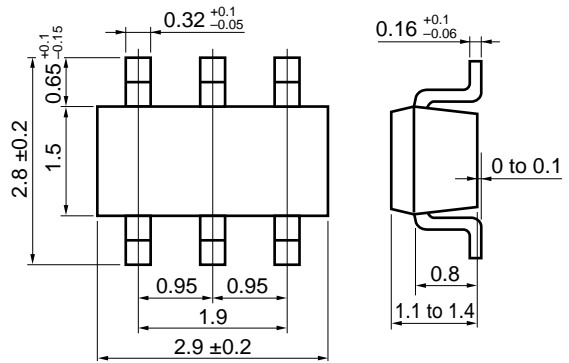
P-CHANNEL MOS FET (6-PIN 2 CIRCUITS)  
 FOR SWITCHING

The  $\mu$ PA607T is a mini-mold device provided with two MOS FET elements. It achieves high-density mounting and saves mounting costs.

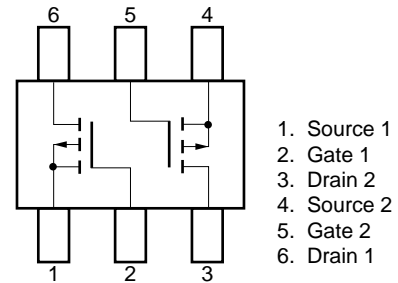
FEATURES

- Two MOS FET elements in package the same size as SC-59
- Complement to  $\mu$ PA606T
- Automatic mounting supported

PACKAGE DIMENSIONS (in millimeters)



PIN CONNECTION



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

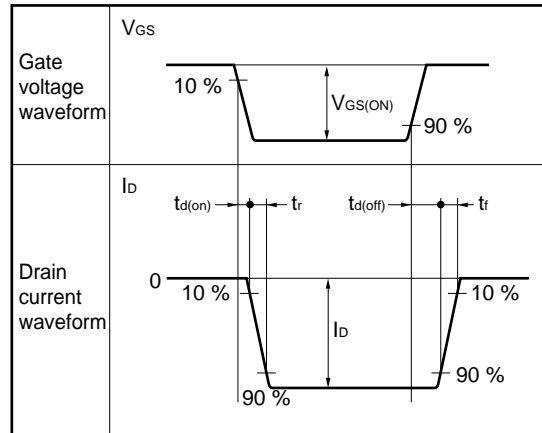
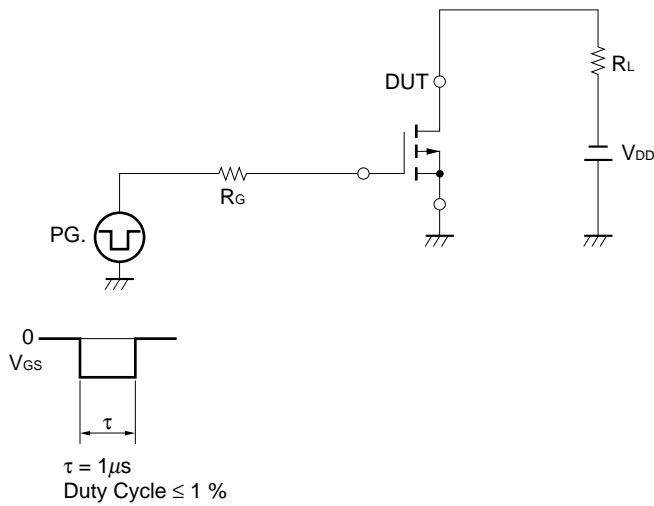
PARAMETER	SYMBOL	RATINGS	UNIT
Drain to Source Voltage	$V_{DSS}$	-50	V
Gate to Source Voltage	$V_{GSS}$	$\pm 16$	V
Drain Current (DC)	$I_{D(DC)}$	-100	mA
Drain Current (pulse)	$I_{D(pulse)}^*$	-200	mA
Total Power Dissipation	$P_T$	300 (Total)	mW
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*  $PW \leq 10$  ms, Duty Cycle  $\leq 50$  %

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

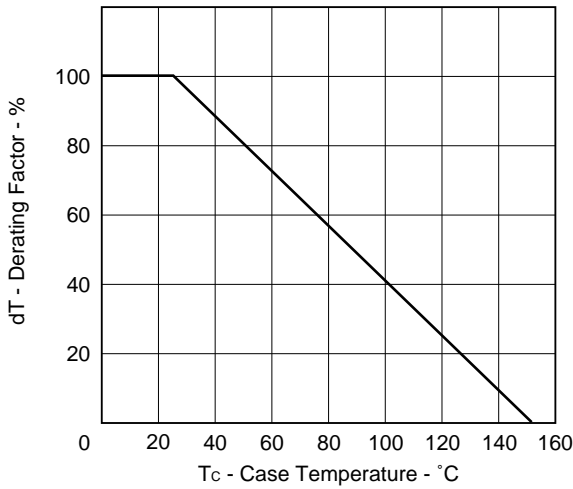
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Drain Cut-off Current	I <sub>DSS</sub>	V <sub>DS</sub> = -50 V, V <sub>GS</sub> = 0	-	-	-1.0	μA
Gate Leakage Current	I <sub>GSS</sub>	V <sub>GS</sub> = ±16 V, V <sub>DS</sub> = 0	-	-	±1.0	μA
Gate Cut-off Voltage	V <sub>GS(off)</sub>	V <sub>DS</sub> = -5.0 V, I <sub>D</sub> = -1.0 μA	-1.5	-1.9	-2.5	V
Forward Transfer Admittance	y <sub>fs</sub>	V <sub>DS</sub> = -5.0 V, I <sub>D</sub> = -10 mA	15	-	-	mS
Drain to Source On-State Resistance	R <sub>DS(on)1</sub>	V <sub>GS</sub> = -4.0 V, I <sub>D</sub> = -10 mA	-	60	100	Ω
Drain to Source On-State Resistance	R <sub>DS(on)2</sub>	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -10 mA	-	40	60	Ω
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = -5.0 V, V <sub>GS</sub> = 0, f = 1.0 MHz	-	15	-	pF
Output Capacitance	C <sub>oss</sub>		-	10	-	pF
Reverse Transfer Capacitance	C <sub>rss</sub>		-	1	-	pF
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>GS(on)</sub> = -5.0 V, R <sub>G</sub> = 10 Ω, V <sub>DD</sub> = -5.0 V, I <sub>D</sub> = -10 mA, R <sub>L</sub> = 500 Ω	-	45	-	ns
Rise Time	t <sub>r</sub>		-	75	-	ns
Turn-Off Delay Time	t <sub>d(off)</sub>		-	25	-	ns
Fall Time	t <sub>f</sub>		-	80	-	ns

**SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS**

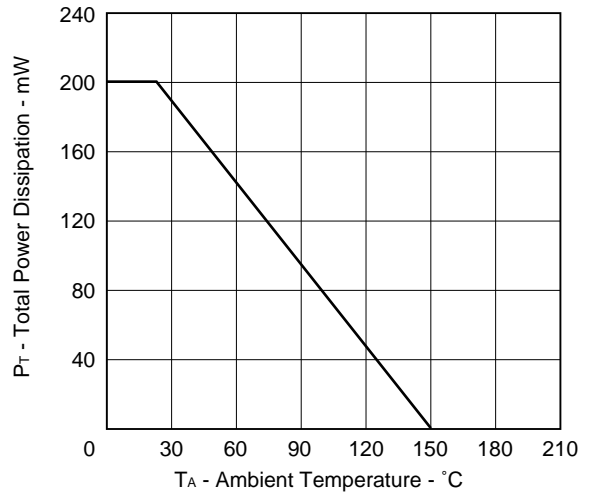


TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

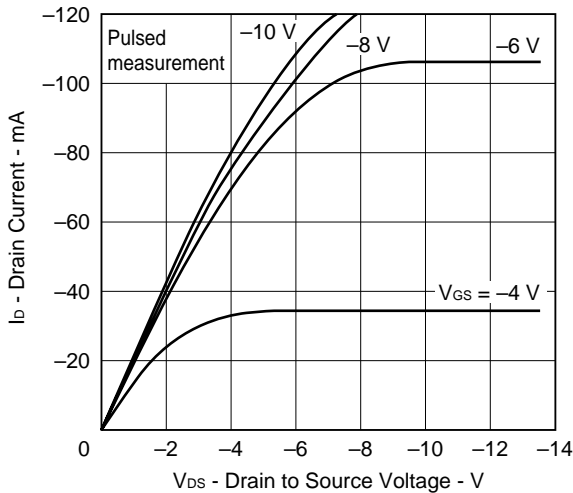
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



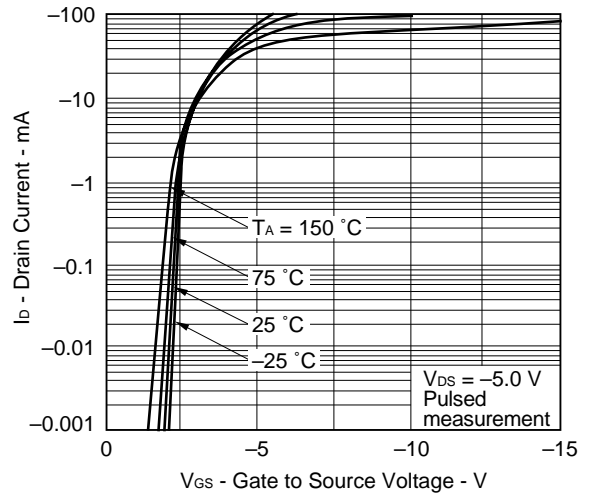
TOTAL POWER DISSIPATION vs. AMBIENT TEMPERATURE



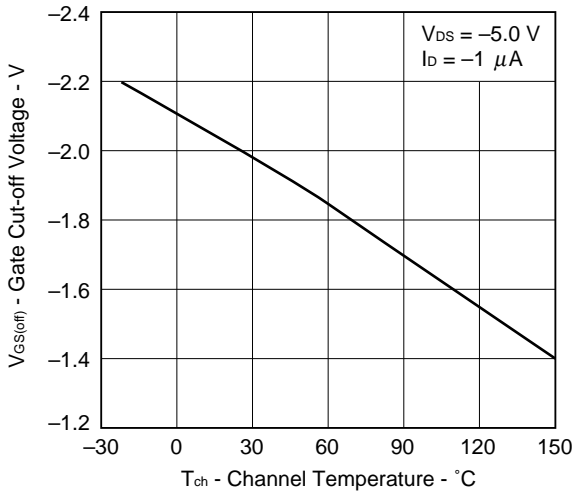
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



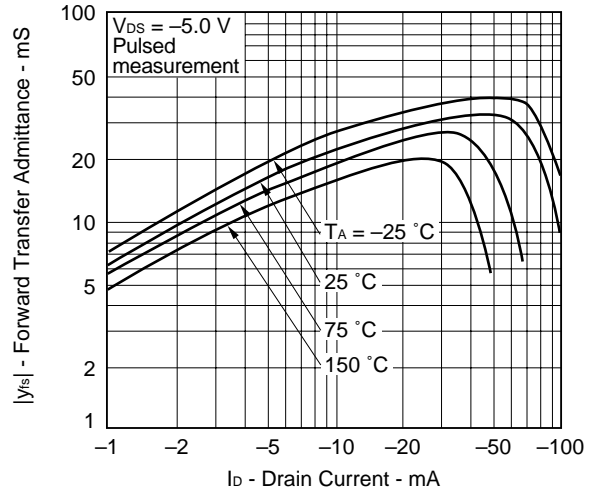
TRANSFER CHARACTERISTICS

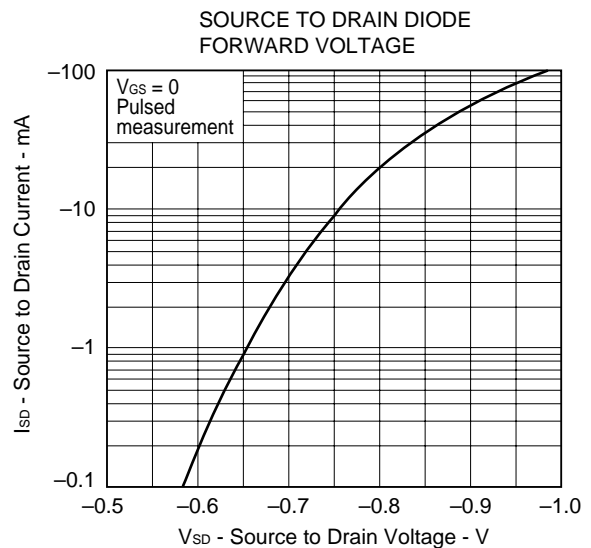
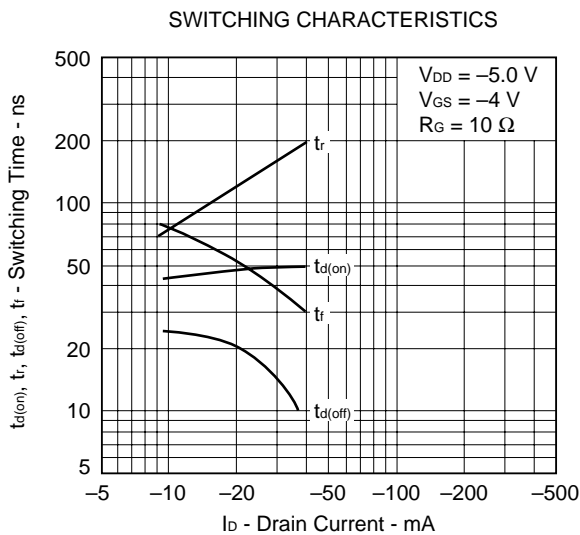
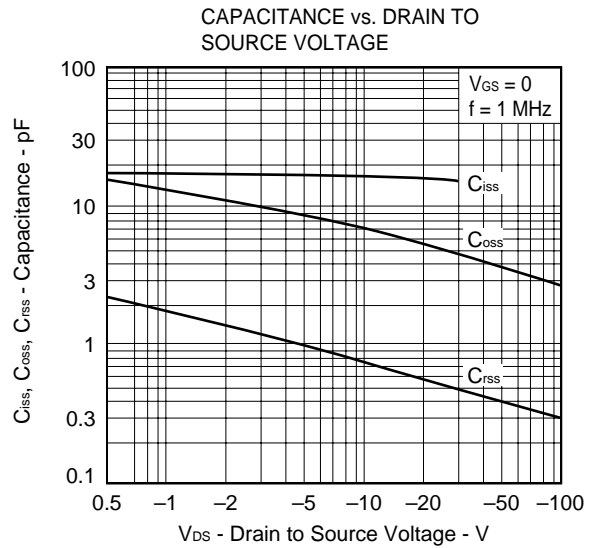
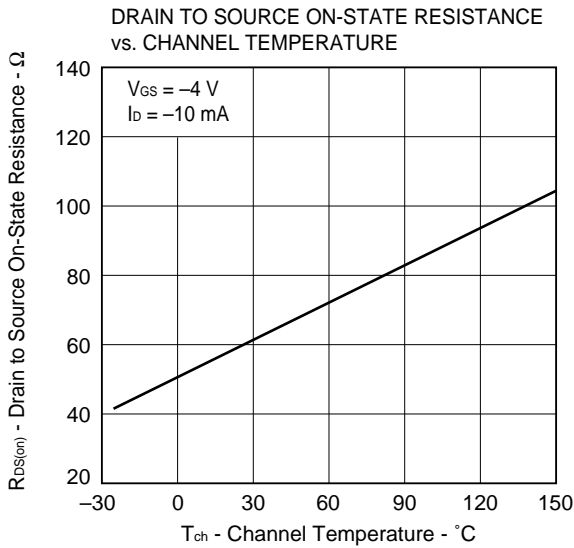
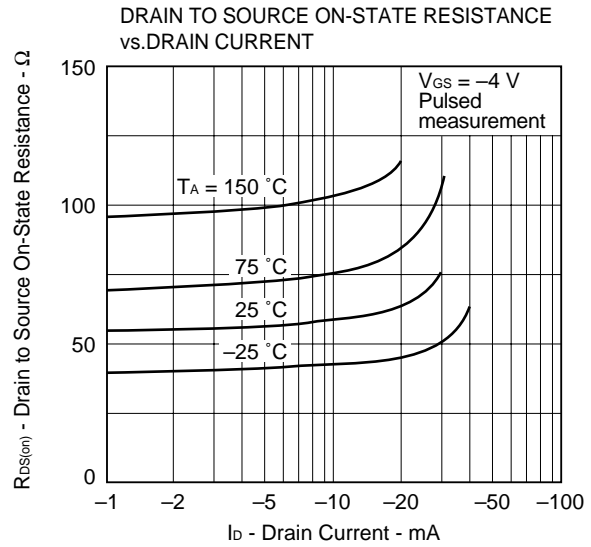
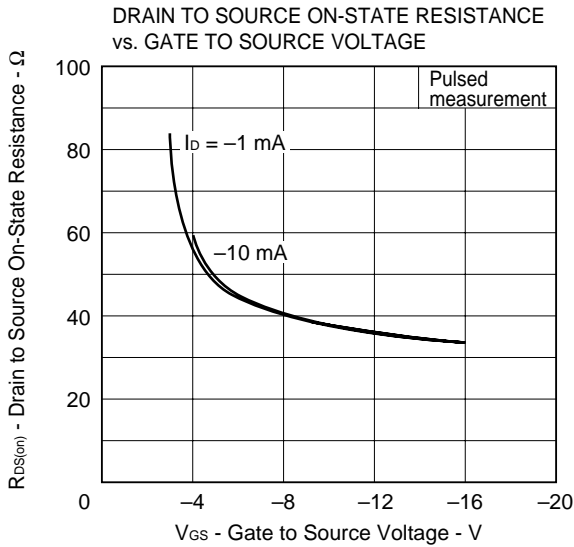


GATE TO SOURCE CUT-OFF VOLTAGE vs. CHANNEL TEMPERATURE



FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT





## REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system	TEI-1202
Quality grade on NEC semiconductor devices	IEI-1209
Semiconductor device mounting technology manual	C10535E
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	X10679E

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