



PJM6601CSG

N and P-Channel Complementary Power MOSFET

Features

- Excellent RDS(ON) and low gate charge

- N-Channel**

$V_{DS}=30V, I_D=3.6A$

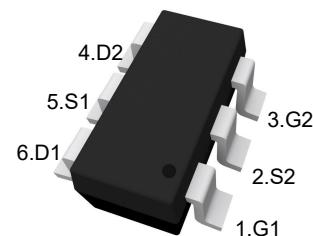
$R_{DS(on)}<58m\Omega @ V_{GS}=10V$

- P-Channel**

$V_{DS}=-30V, I_D=-2A$

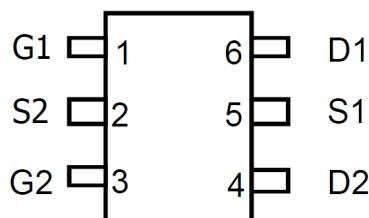
$R_{DS(on)}<130m\Omega @ V_{GS}=-10V$

SOT-23-6



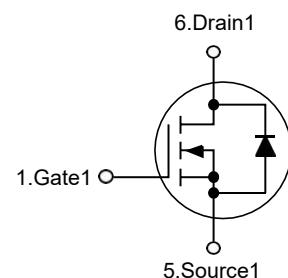
Marking Code: 6601

Pin Assignment

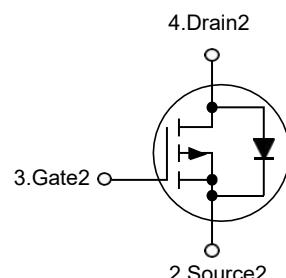


Top View

Schematic Diagram



N-Channel



P-Channel

Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	N-Channel	P-Channel	Unit
Drain-Source Voltage	V_{DS}	30	-30	V
Gate-Source Voltage	V_{GS}	± 20		V
Drain Current-Continuous	I_D	3.6	-2	A
Drain Current-Pulsed ^{Note1}	I_{DM}	15	-10	A
Maximum Power Dissipation	P_D	1.2		W
Junction Temperature	T_J	150		°C
Storage Temperature Range	T_{STG}	-55 to +150		°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	104	°C/W
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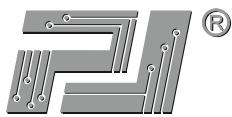


N-Channel

Electrical Characteristics

($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}}=0\text{V}, I_{\text{D}}=250\mu\text{A}$	30	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{\text{DS}}=30\text{V}, V_{\text{GS}}=0\text{V}$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{\text{GS}}=\pm 20\text{V}, V_{\text{DS}}=0\text{V}$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$V_{\text{GS}(\text{th})}$	$V_{\text{DS}}=V_{\text{GS}}, I_{\text{D}}=250\mu\text{A}$	1.2	1.5	2.2	V
Drain-Source On-Resistance ^{Note3}	$R_{\text{DS}(\text{on})}$	$V_{\text{GS}}=10\text{V}, I_{\text{D}}=3.6\text{A}$	--	40	50	$\text{m}\Omega$
		$V_{\text{GS}}=4.5\text{V}, I_{\text{D}}=3\text{A}$	--	58	73	$\text{m}\Omega$
Forward Transconductance ^{Note3}	g_{FS}	$V_{\text{DS}}=5\text{V}, I_{\text{D}}=3.6\text{A}$	--	11	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{\text{DS}}=15\text{V}, V_{\text{GS}}=0\text{V}, f=1\text{MHz}$	--	230	--	pF
Output Capacitance	C_{oss}		--	40	--	pF
Reverse Transfer Capacitance	C_{rss}		--	17	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{\text{d(on)}}$	$V_{\text{DS}}=15\text{V}, I_{\text{D}}=3.6\text{A}, V_{\text{GS}}=4.5\text{V}, R_{\text{G}}=6\Omega$	--	10	--	nS
Turn-on Rise Time	t_r		--	50	--	nS
Turn-off Delay Time	$t_{\text{d(off)}}$		--	10	--	nS
Turn-off Fall Time	t_f		--	20	--	nS
Total Gate Charge	Q_g	$V_{\text{DS}}=15\text{V}, I_{\text{D}}=3.6\text{A}, V_{\text{GS}}=10\text{V}$	--	4	--	nC
Gate-Source Charge	Q_{gs}		--	0.75	--	nC
Gate-Drain Charge	Q_{gd}		--	0.65	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V_{SD}	$V_{\text{GS}}=0\text{V}, I_{\text{s}}=3.6\text{A}$	--	--	1.2	V
Diode Forward Current ^{Note2}	I_{s}		--	--	3.6	A



P-Channel

Electrical Characteristics

($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(\text{BR})\text{DSS}}$	$V_{\text{GS}}=0\text{V}, I_{\text{D}}=-250\mu\text{A}$	30	--	--	V
Zero Gate Voltage Drain Current	$-I_{\text{DSS}}$	$V_{\text{DS}}=-30\text{V}, V_{\text{GS}}=0\text{V}$	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{\text{GS}}=\pm 20\text{V}, V_{\text{DS}}=0\text{V}$	--	--	± 100	nA
Gate Threshold Voltage ^{Note3}	$-V_{\text{GS}(\text{th})}$	$V_{\text{DS}}=V_{\text{GS}}, I_{\text{D}}=-250\mu\text{A}$	1	1.6	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{\text{DS}(\text{on})}$	$V_{\text{GS}}=-10\text{V}, I_{\text{D}}=-2\text{A}$	--	75	130	$\text{m}\Omega$
		$V_{\text{GS}}=-4.5\text{V}, I_{\text{D}}=-1.5\text{A}$	--	115	180	$\text{m}\Omega$
Forward Transconductance ^{Note3}	g_{FS}	$V_{\text{DS}}=-10\text{V}, I_{\text{D}}=-2\text{A}$	--	2	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{\text{DS}}=-15\text{V}, V_{\text{GS}}=0\text{V}, f=1\text{MHz}$	--	226	--	pF
Output Capacitance	C_{oss}		--	47	--	pF
Reverse Transfer Capacitance	C_{rss}		--	28	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{\text{d}(\text{on})}$	$V_{\text{DS}}=-15\text{V}, R_{\text{L}}=15\Omega$ $V_{\text{GS}}=-10\text{V}, R_{\text{G}}=6\Omega$	--	9	--	nS
Turn-on Rise Time	t_{r}		--	9	--	nS
Turn-off Delay Time	$t_{\text{d}(\text{off})}$		--	18	--	nS
Turn-off Fall Time	t_{f}		--	6	--	nS
Total Gate Charge	Q_{g}	$V_{\text{DS}}=-15\text{V}, I_{\text{D}}=-2\text{A}, V_{\text{GS}}=-10\text{V}$	--	8.5	--	nC
Gate-Source Charge	Q_{gs}		--	2.3	--	nC
Gate-Drain Charge	Q_{gd}		--	1.5	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	$-V_{\text{SD}}$	$V_{\text{GS}}=0\text{V}, I_{\text{S}}=-2\text{A}$	--	--	1.2	V
Diode Forward Current ^{Note2}	$-I_{\text{S}}$		--	--	2	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

3. Pulse Test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$

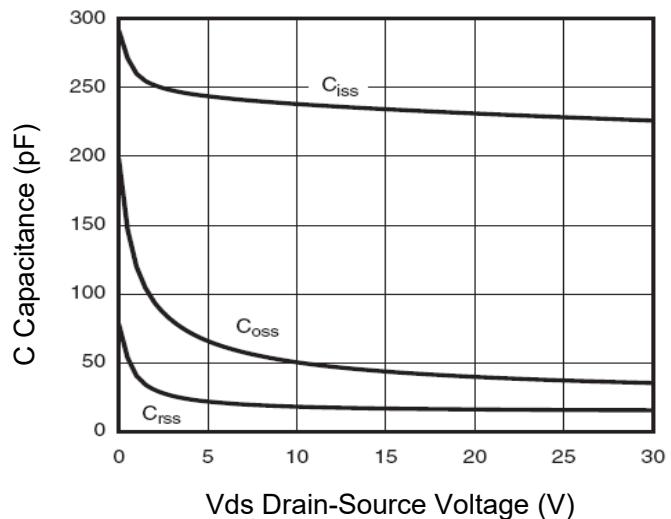
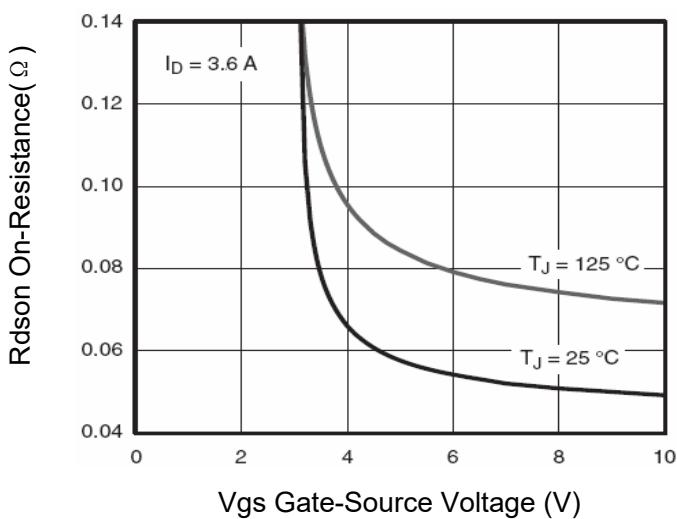
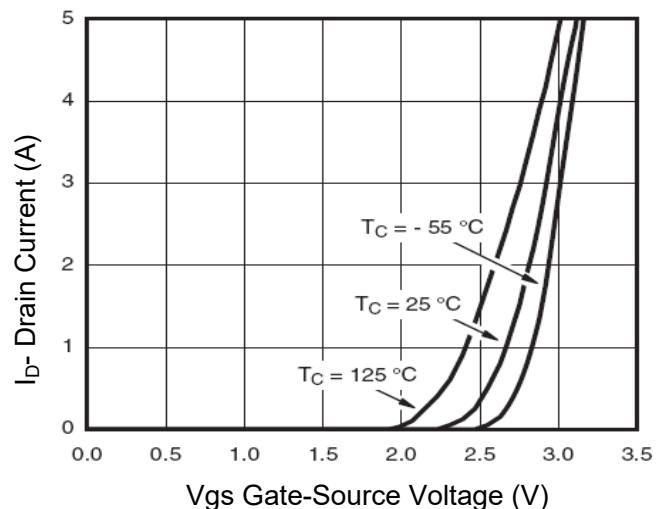
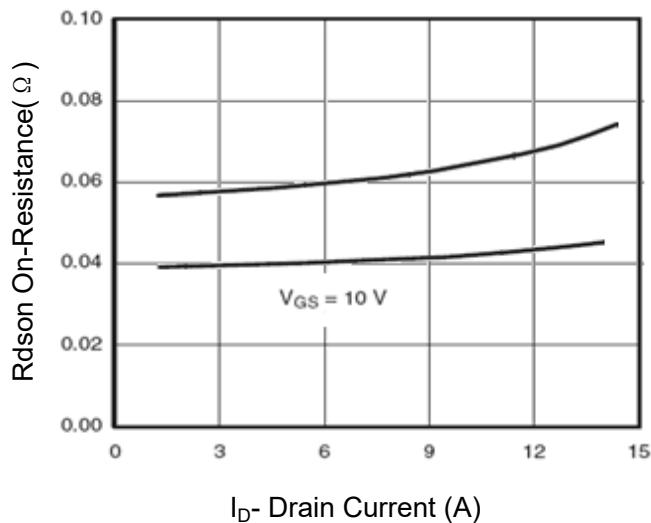
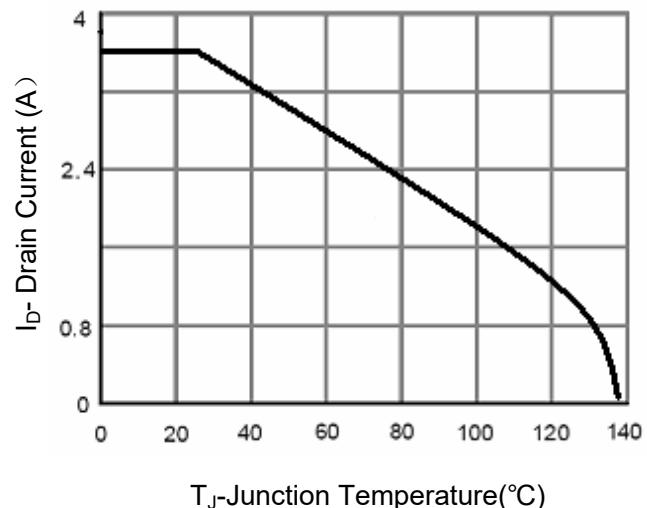
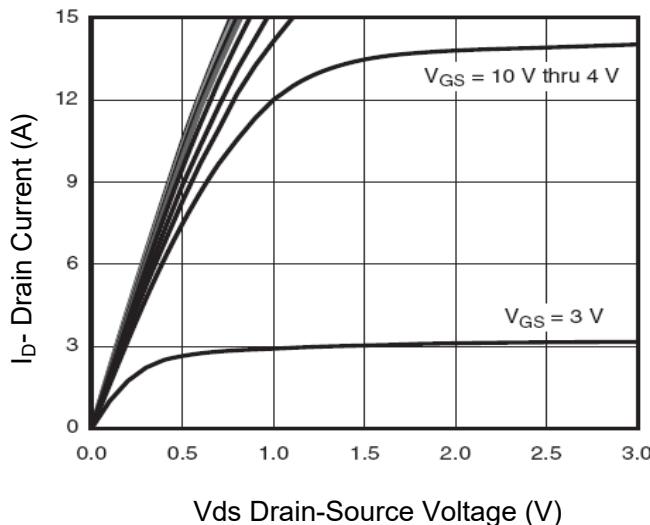


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N-Channel

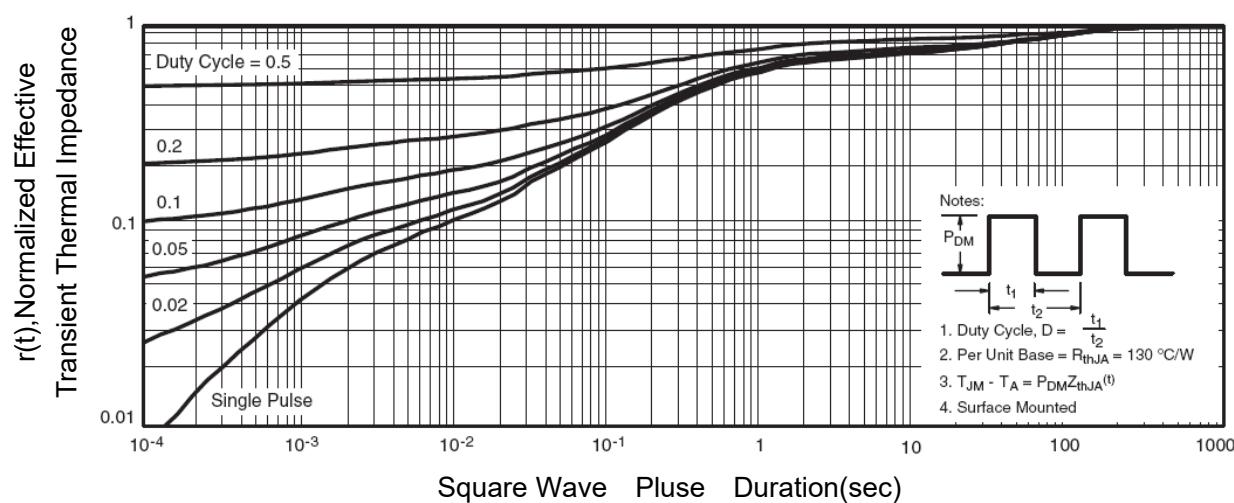
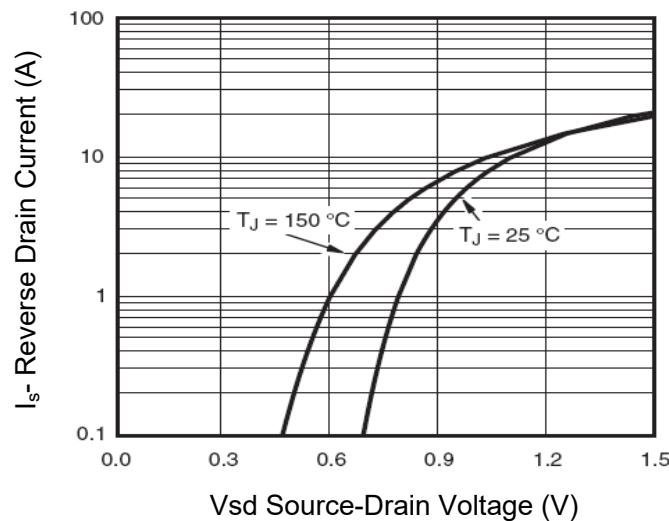
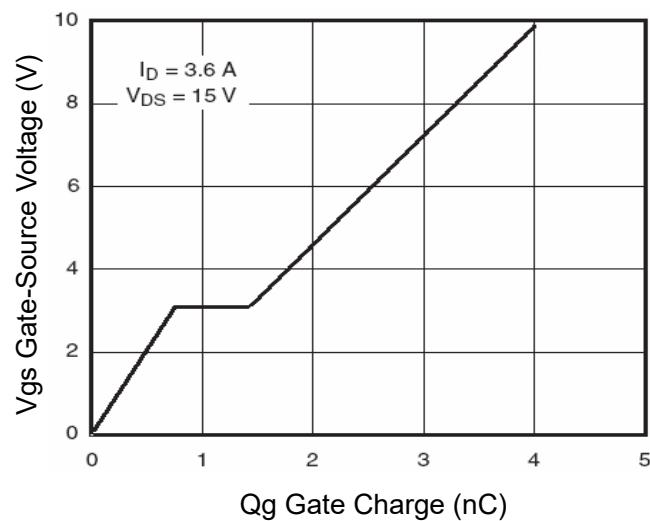
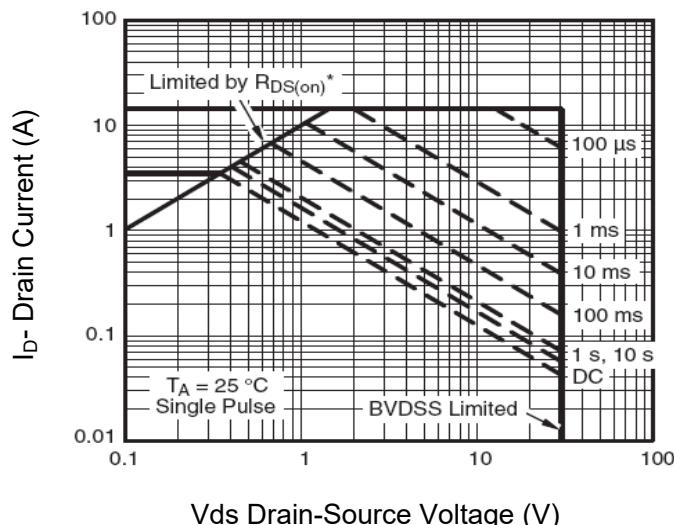
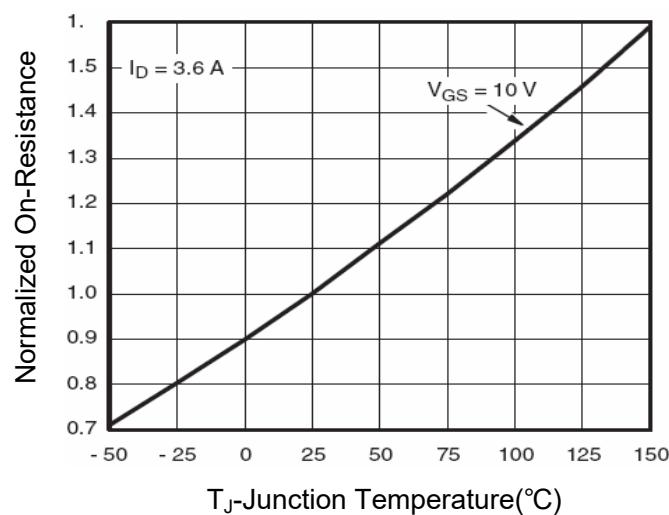
Typical Characteristics Curves





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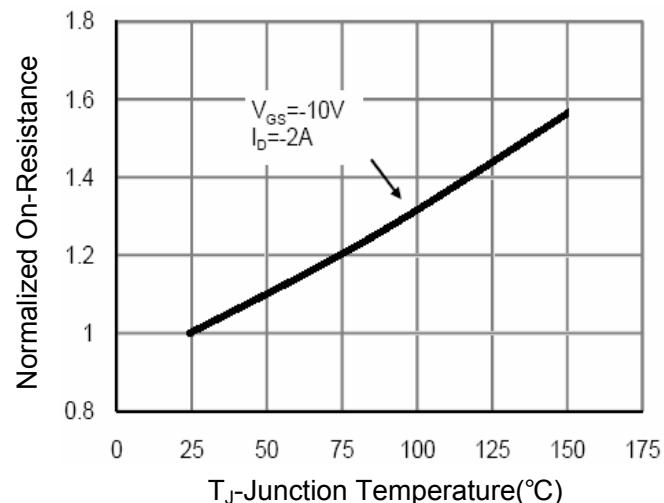
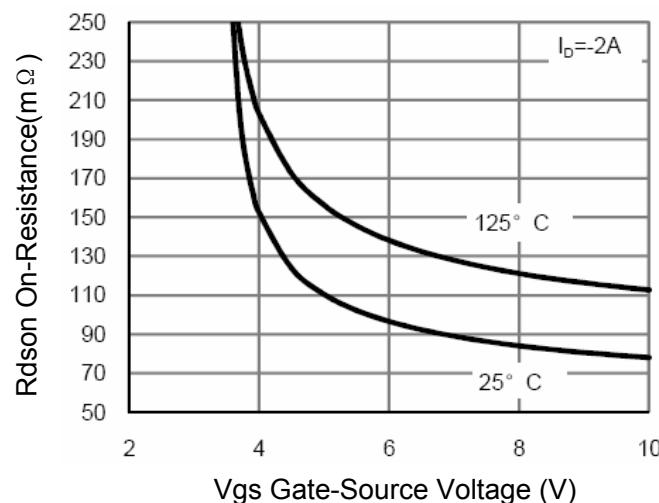
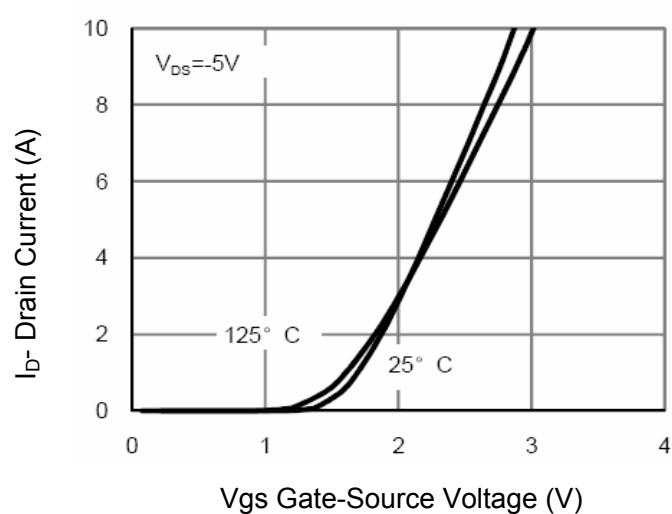
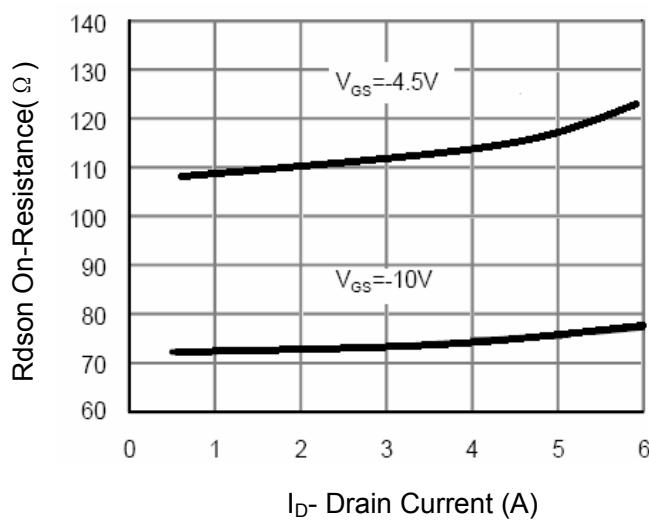
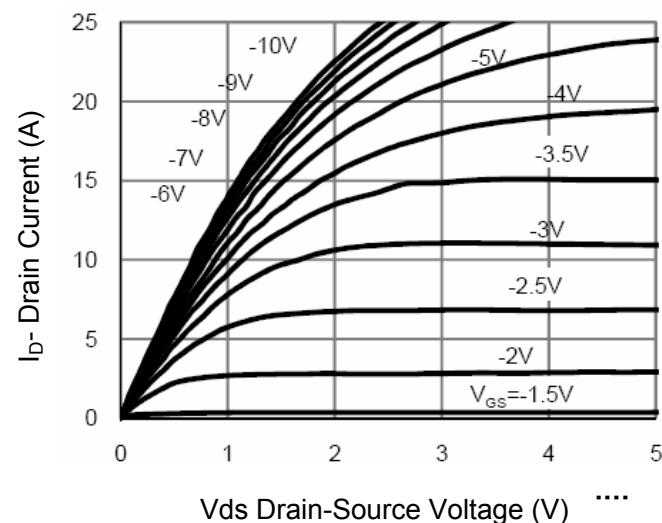
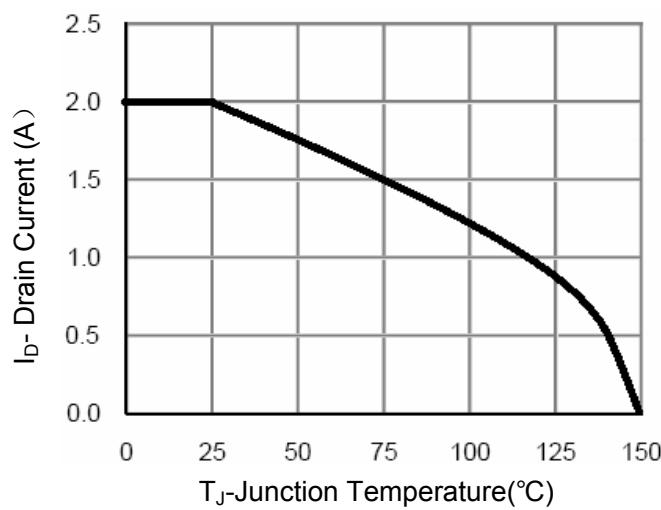
N and P-Channel Complementary Power MOSFET

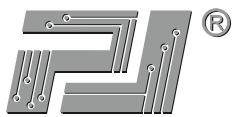




P-Channel

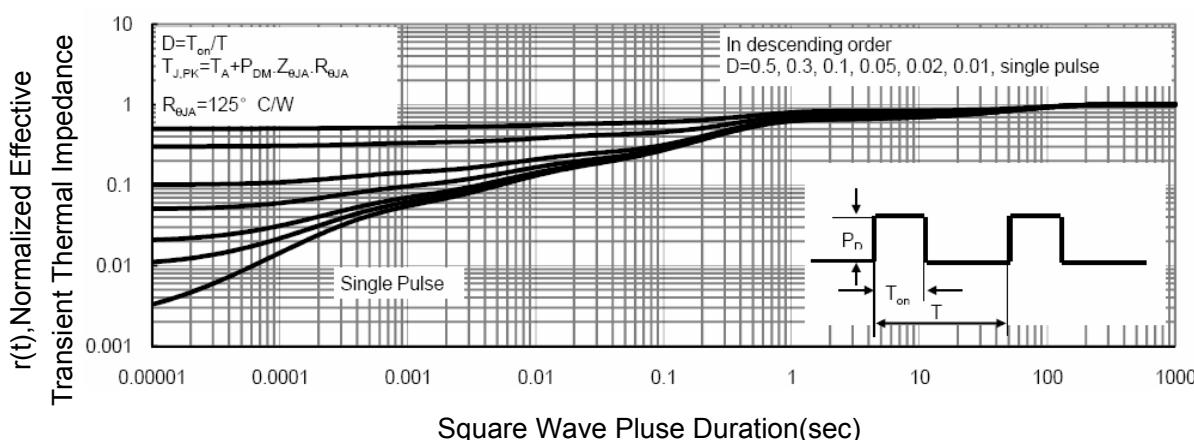
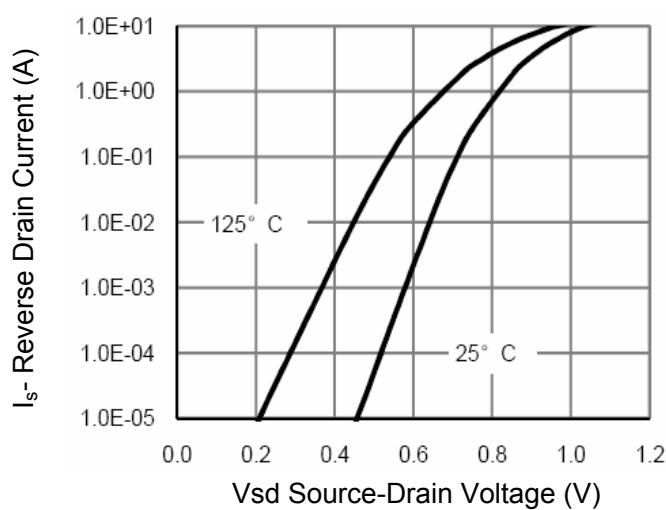
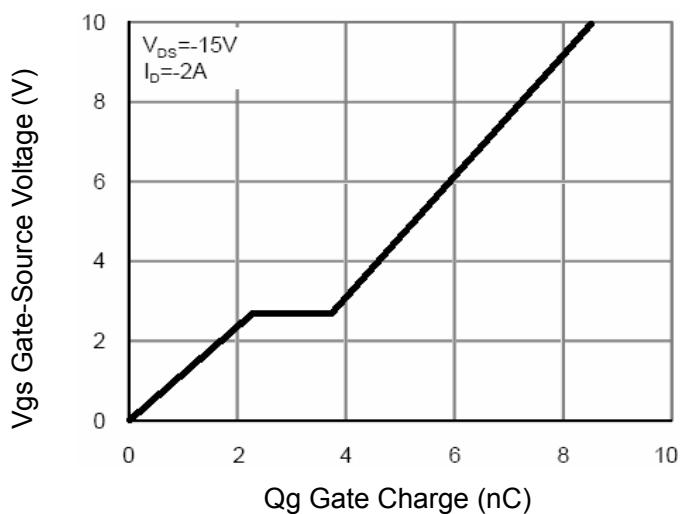
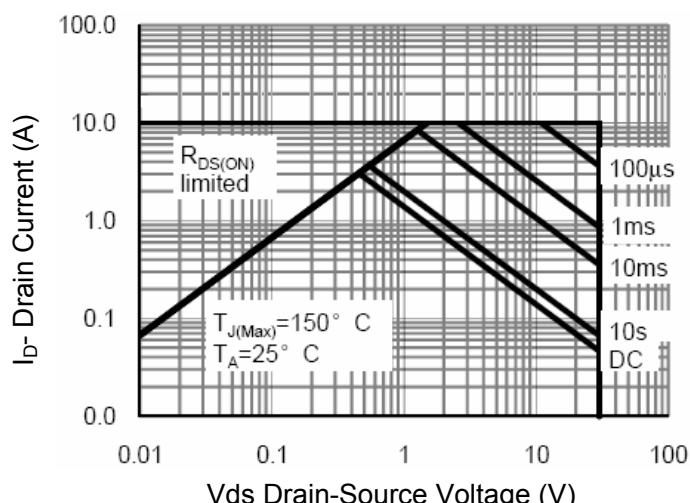
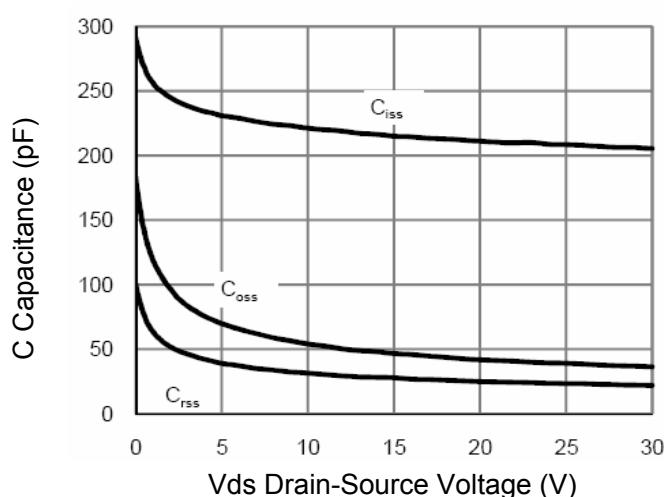
Typical Characteristics Curves

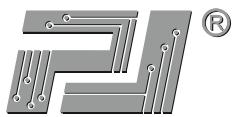




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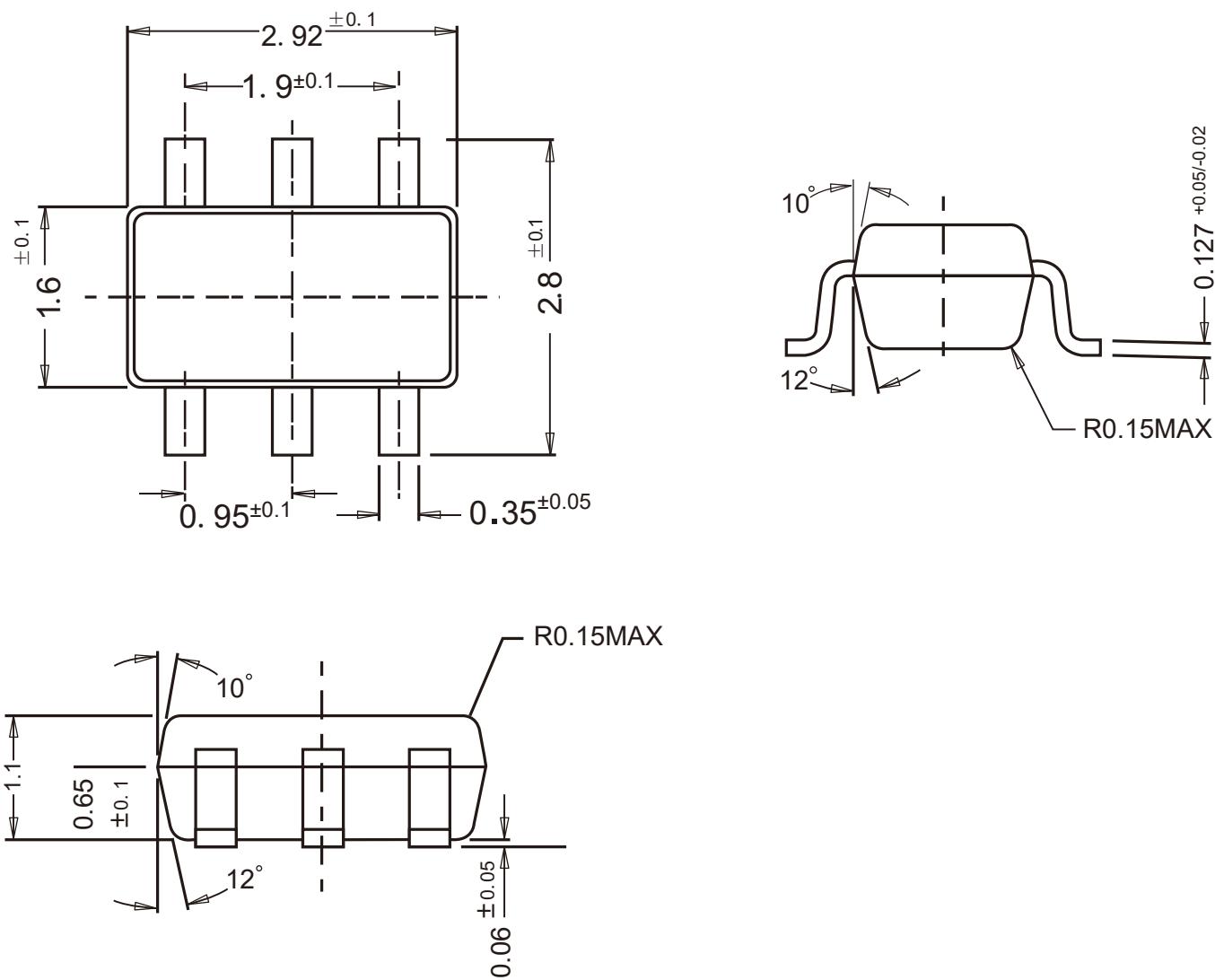




Package Outline

SOT-23-6

Dimensions in mm

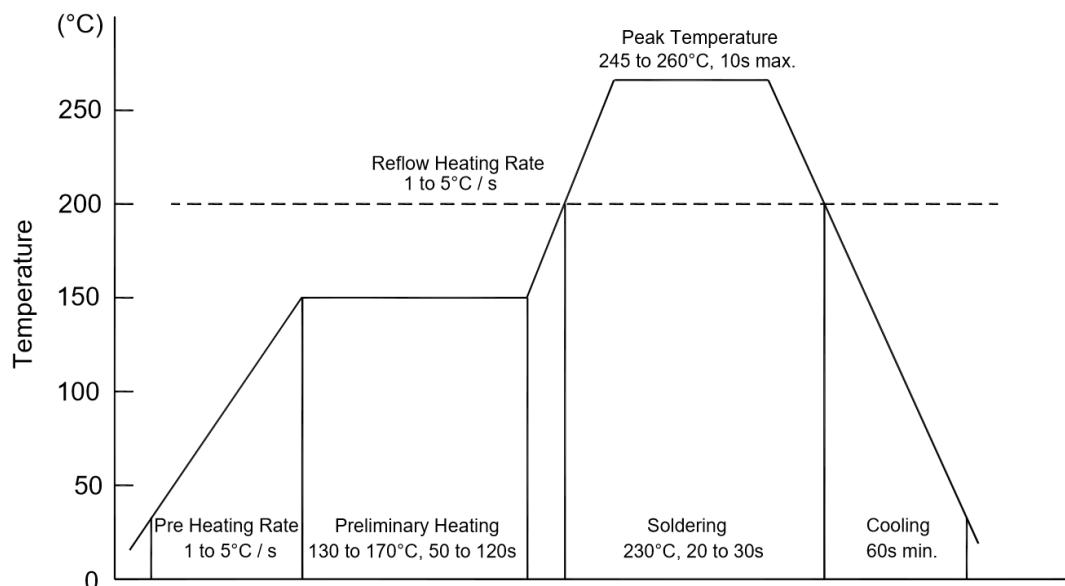


Ordering Information

Device	Package	Shipping
PJM6601CSG	SOT-23-6	3,000PCS/Reel&7inches

Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 °C. If peak temperature is below 245 °C, you may adjust the following parameters:

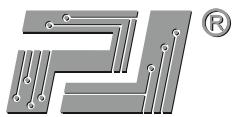
- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

- Temperature: 370 °C
- Time: 3s max.
- Times: one time

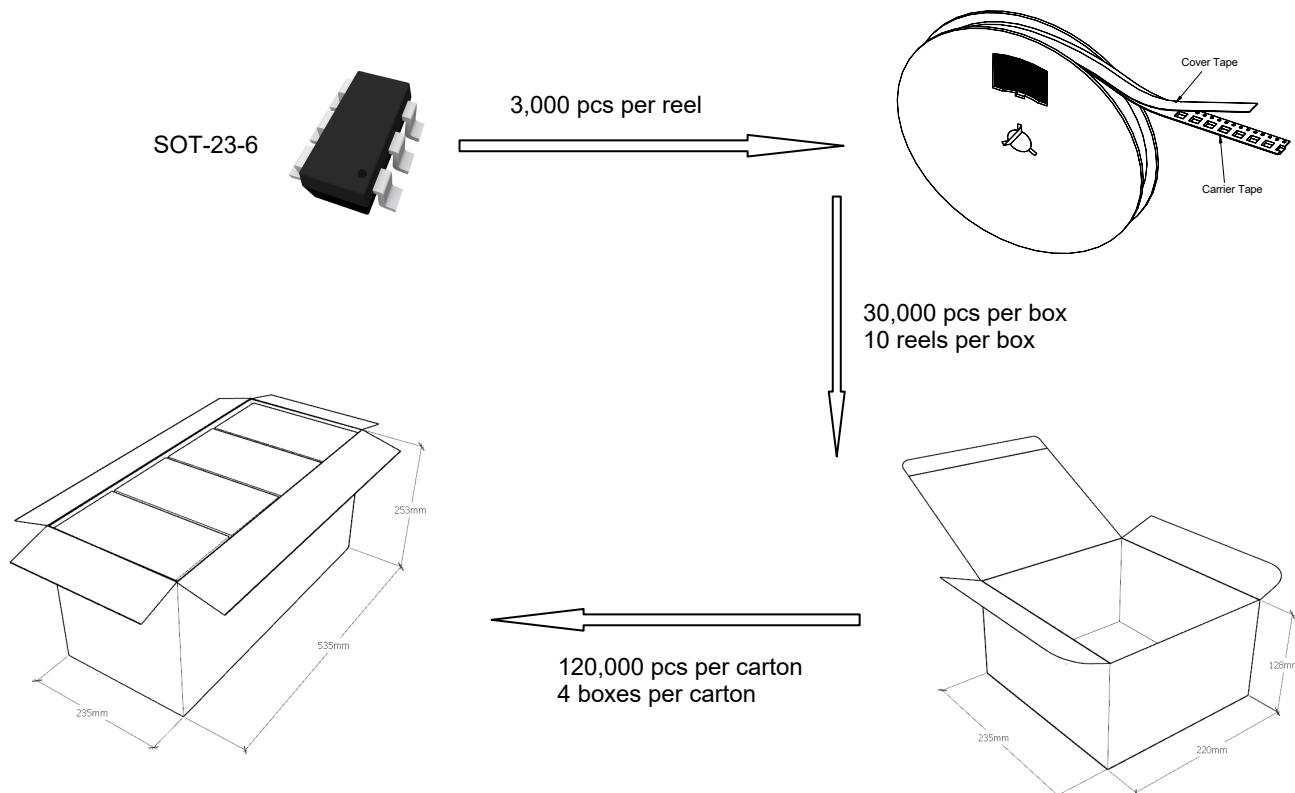
◆ Storage conditions

- **Temperature**
5 to 40 °C
- **Humidity**
30 to 80% RH
- **Recommended period**
One year after manufacturing

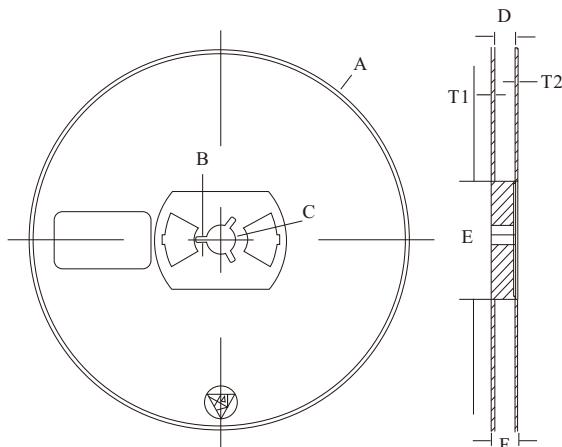


Package Specifications

- The method of packaging

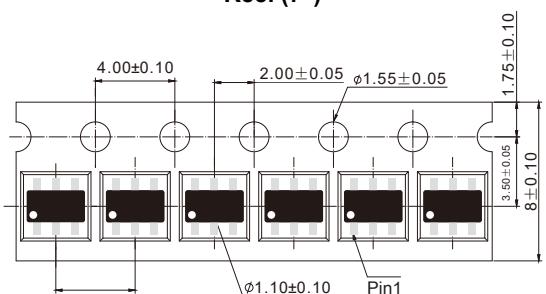


◆ Embossed tape and reel data



Symbol	Value (unit: mm)
A	$\varnothing 177.8 \pm 1$
B	2.7 ± 0.2
C	$\varnothing 13.5 \pm 0.2$
E	$\varnothing 54.5 \pm 0.2$
F	12.3 ± 0.3
D	$9.6 +2/-0.3$
T1	1.0 ± 0.2
T2	1.2 ± 0.2

Reel (7")



Tape (8mm)