



PJM6807CSG

N and P-Channel Complementary Power MOSFET

Features

- **N-Channel**

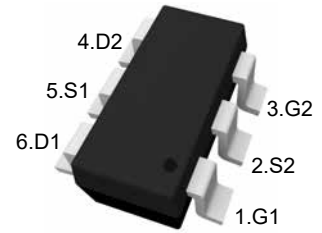
$V_{DS}=30V, I_D=5.8A$
 $R_{DS(on)} < 41m\Omega @ V_{GS}=10V$
 $R_{DS(on)} < 45m\Omega @ V_{GS}=4.5V$

- **P-Channel**

$V_{DS}=-30V, I_D=-4.1A$
 $R_{DS(on)} < 60m\Omega @ V_{GS}=-10V$
 $R_{DS(on)} < 87m\Omega @ V_{GS}=-4.5V$

- High Power and Current handing capability

SOT-23-6

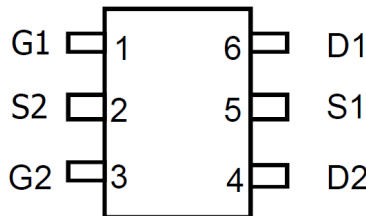


Marking Code:6807

Applications

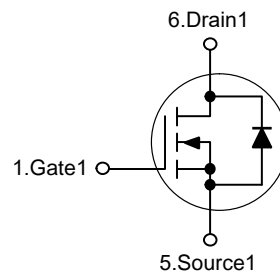
- Motor Drive Applications
- Networking
- Half/Full Bridge Topology

Pin Assignment

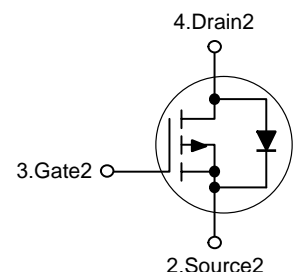


Top View

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}	± 12	± 20	V
Drain Current-Continuous	I_D	5.8	-4.1	A
Drain Current-Pulsed ^{Note1}	I_{DM}	30	-20	A
Maximum Power Dissipation	P_D	1.2		W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150		°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°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	30	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note3}	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.7	0.9	1.4	V
Drain-source on-resistance ^{Note3}	R _{DS(on)}	V _{GS} =10V, I _D =5.8A	--	28	41	mΩ
		V _{GS} =4.5V, I _D =5A	--	31	45	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V, I _D =5A	10	--	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHz	--	820	--	pF
Output Capacitance	C _{oss}		--	99	--	pF
Reverse Transfer Capacitance	C _{rss}		--	77	--	pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =15V, R _L =2.7Ω V _{GS} =10V, R _{GEN} =3Ω	--	3.3	--	nS
Turn-on Rise Time	t _r		--	4.8	--	nS
Turn-off Delay Time	t _{d(off)}		--	26	--	nS
Turn-off Fall Time	t _f		--	4	--	nS
Total Gate Charge	Q _g	V _{DS} =15V, I _D =5.8A, V _{GS} =4.5V	--	9.5	--	nC
Gate-Source Charge	Q _{gs}		--	1.5	--	nC
Gate-Drain Charge	Q _{gd}		--	3	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V _{SD}	V _{GS} =0V, I _S =5.8A	--	--	1.2	V
Diode Forward Current ^{Note2}	I _S		--	--	5.8	A

**P-Channel****Electrical Characteristics**(T_a=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	-V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	30	--	--	V
Zero Gate Voltage Drain Current	-I _{DSS}	V _{DS} =-24V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note3}	-V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	1	1.4	3	V
Drain-source on-resistance ^{Note3}	R _{DS(on)}	V _{GS} =-10V, I _D =-4.1A	--	48	60	mΩ
		V _{GS} =-4.5V, I _D =-3A	--	60	87	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =-5V, I _D =-4A	5.5	--	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz	--	650	--	pF
Output Capacitance	C _{oss}		--	105	--	pF
Reverse Transfer Capacitance	C _{rss}		--	65	--	pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =-15V, R _L =3.6Ω V _{GS} =-10V, R _{CEN} =3Ω	--	8.5	--	nS
Turn-on Rise Time	t _r		--	4.5	--	nS
Turn-off Delay Time	t _{d(off)}		--	26	--	nS
Turn-off Fall Time	t _f		--	12.5	--	nS
Total Gate Charge	Q _g	V _{DS} =-15V I _D =-4.1A, V _{GS} =-10V	--	12.5	--	nC
Gate-Source Charge	Q _{gs}		--	2.8	--	nC
Gate-Drain Charge	Q _{gd}		--	2.7	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	-V _{SD}	V _{GS} =0V, I _S =-4.1A	--	--	1.2	V
Diode Forward Current ^{Note2}	-I _S		--	--	4.1	A

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

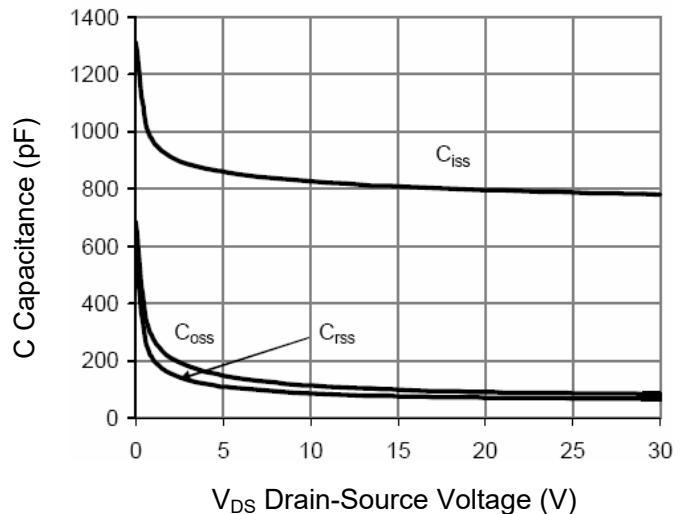
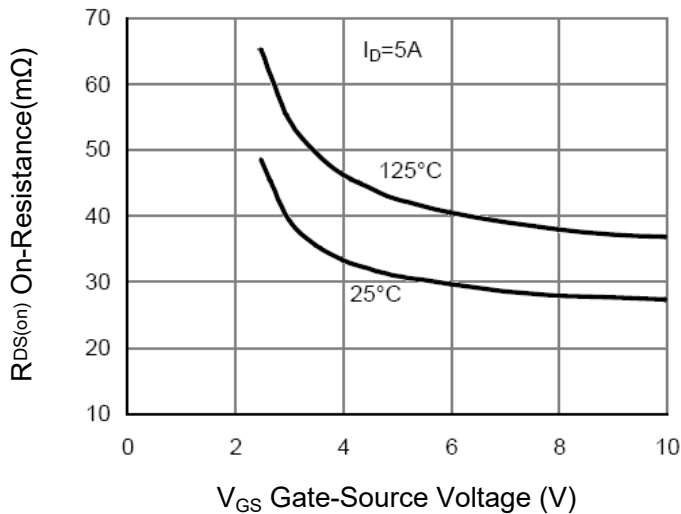
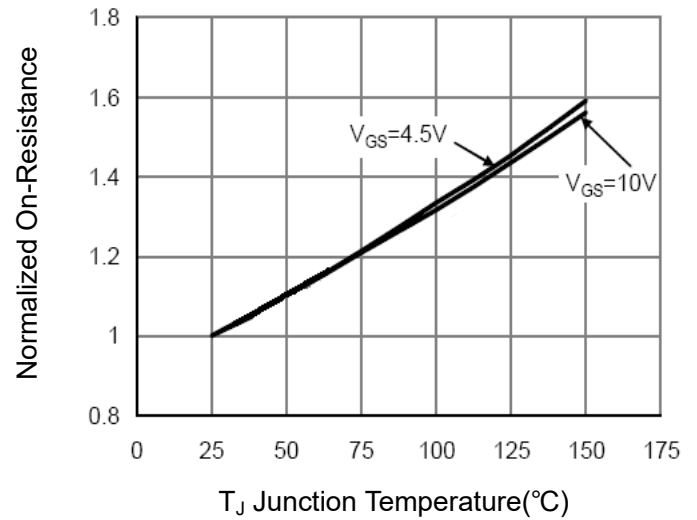
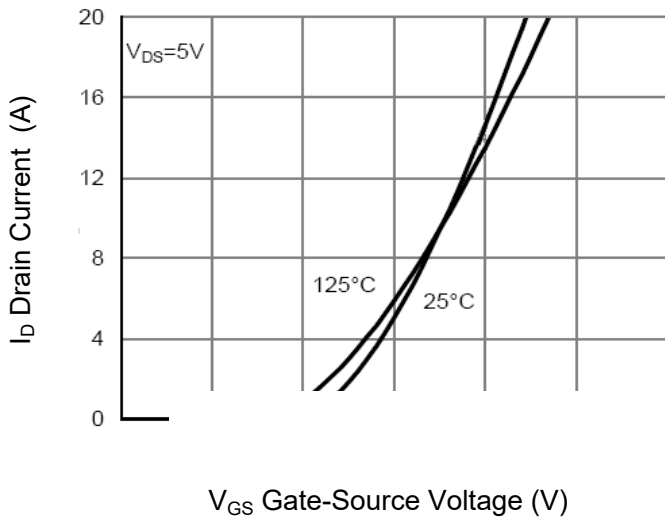
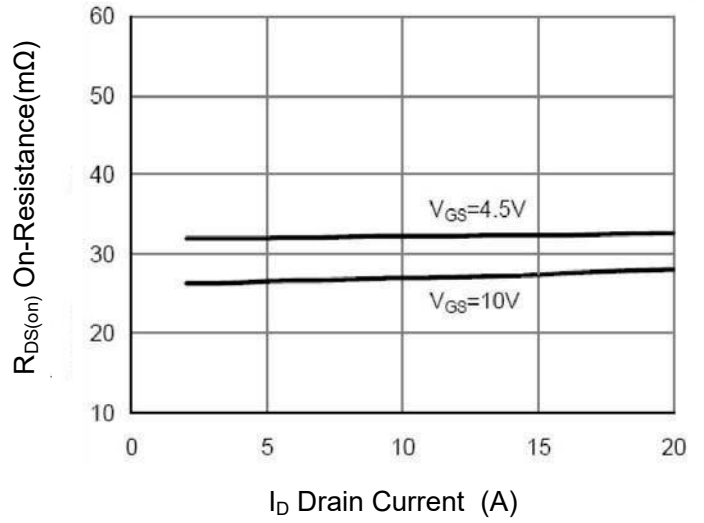
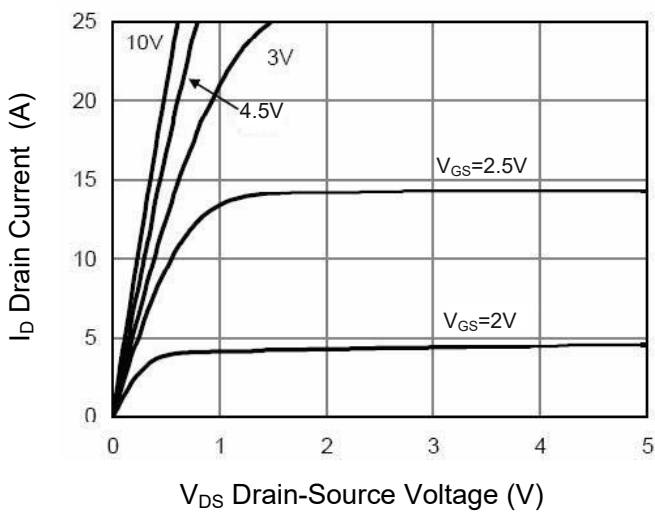
2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse width ≤ 300μs, duty cycle ≤ 2%.



N-Channel

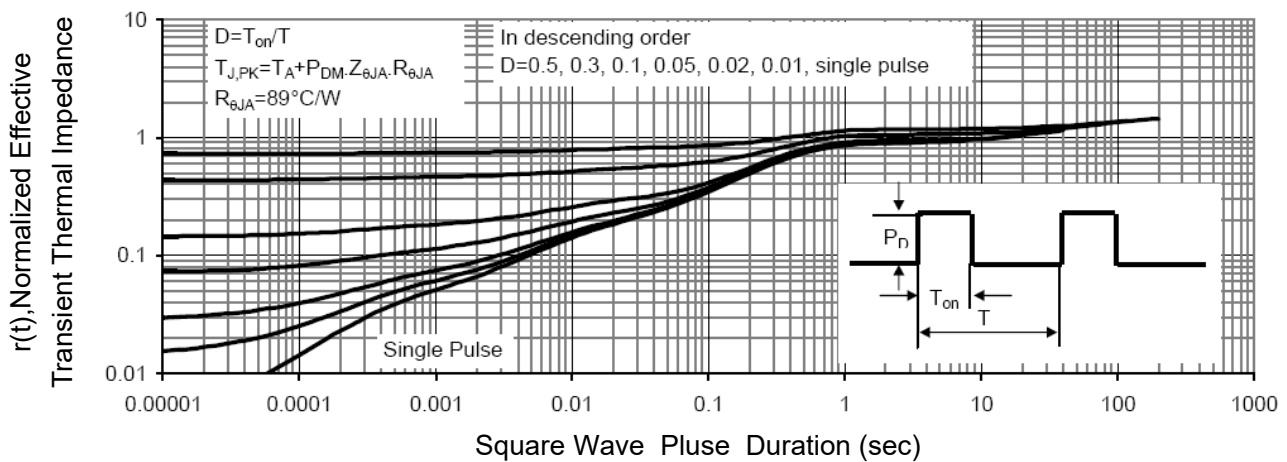
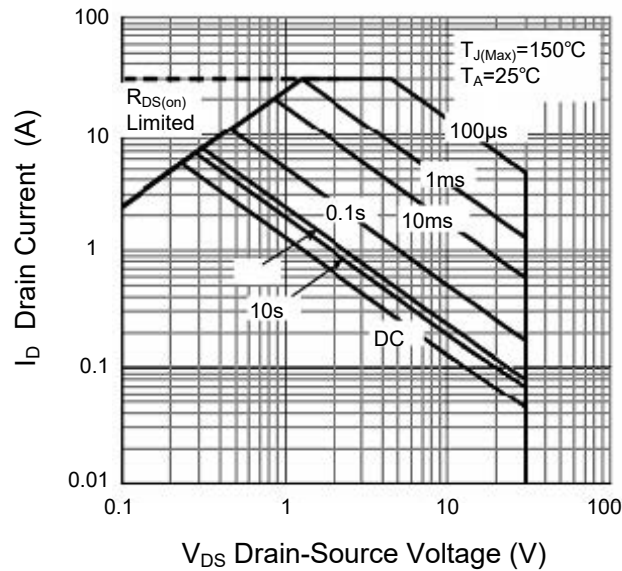
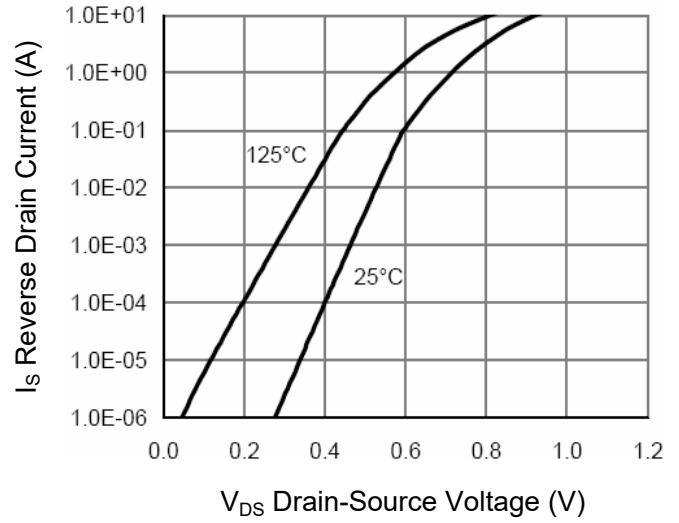
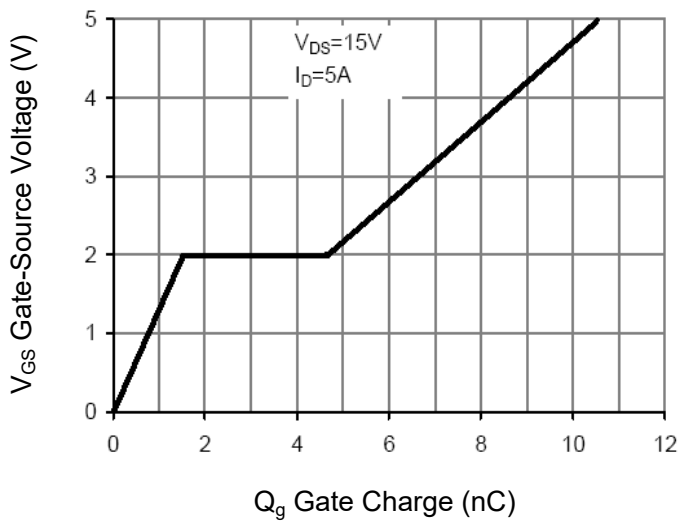
Electrical Characteristics Curves





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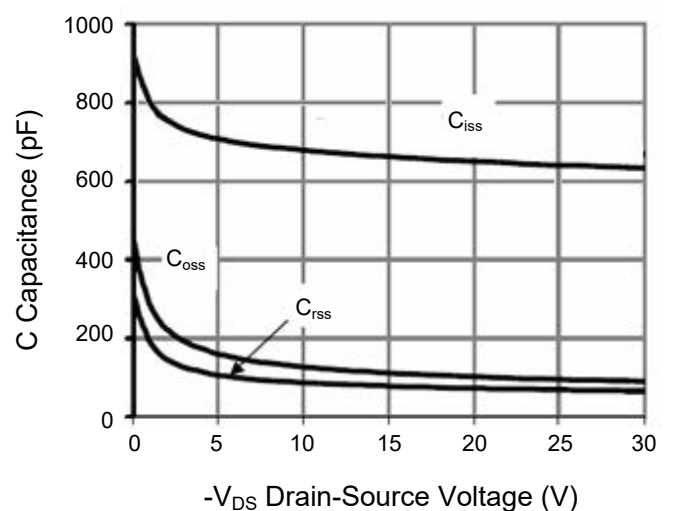
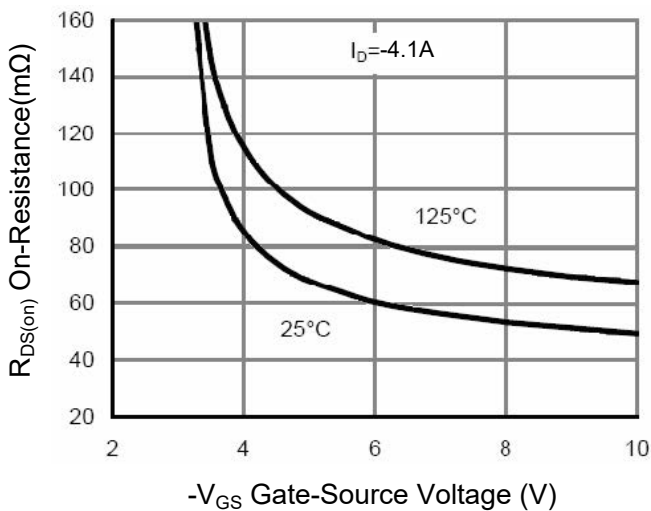
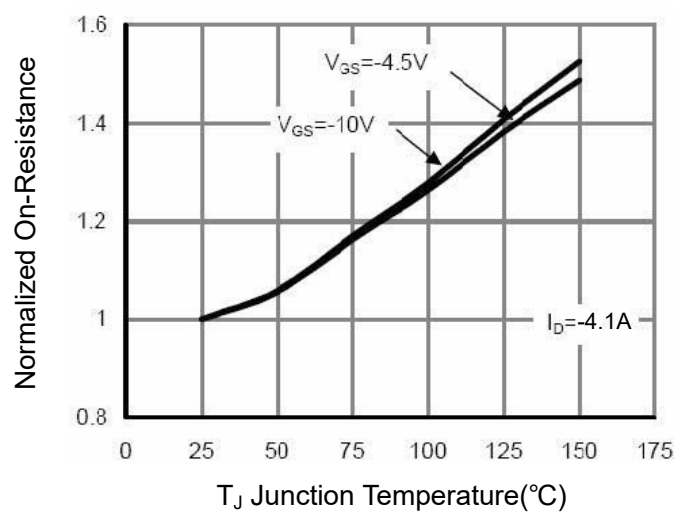
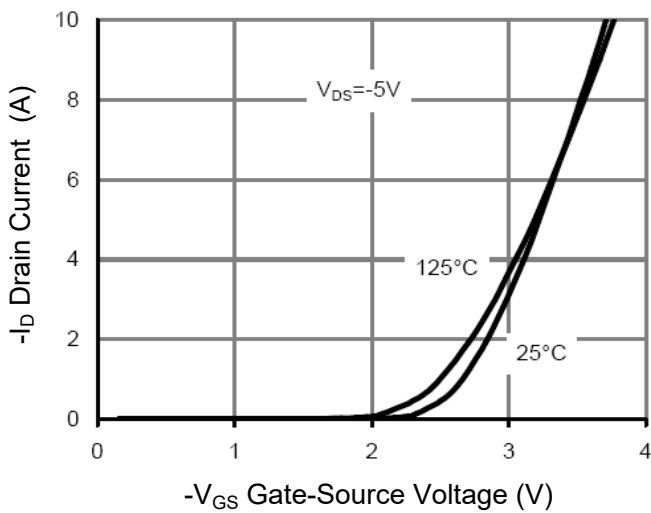
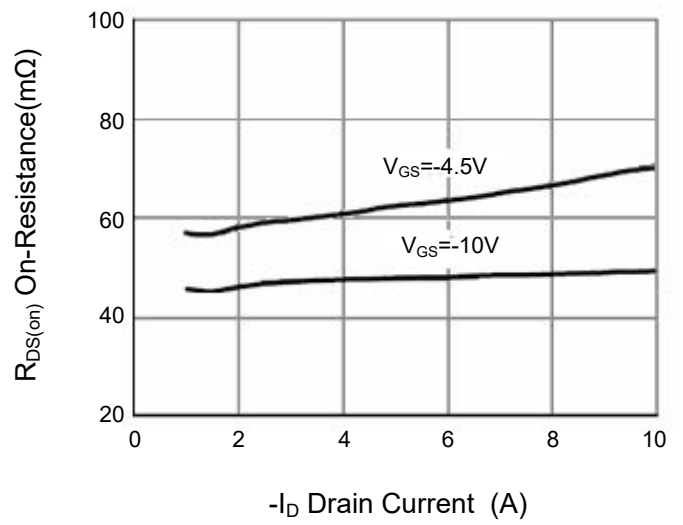
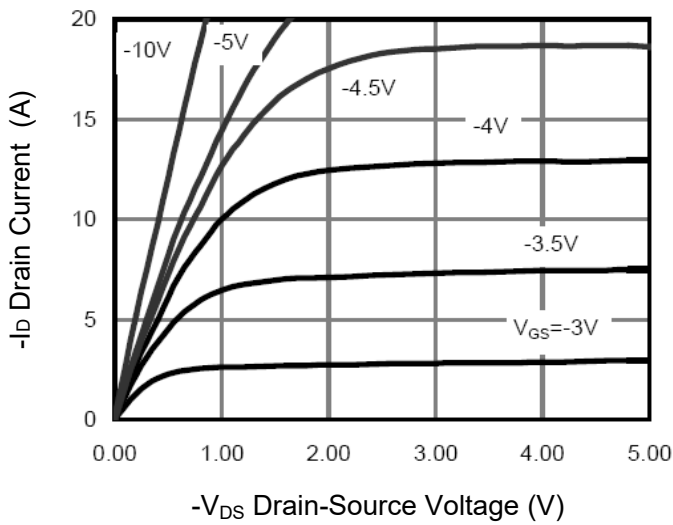
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P-Channel

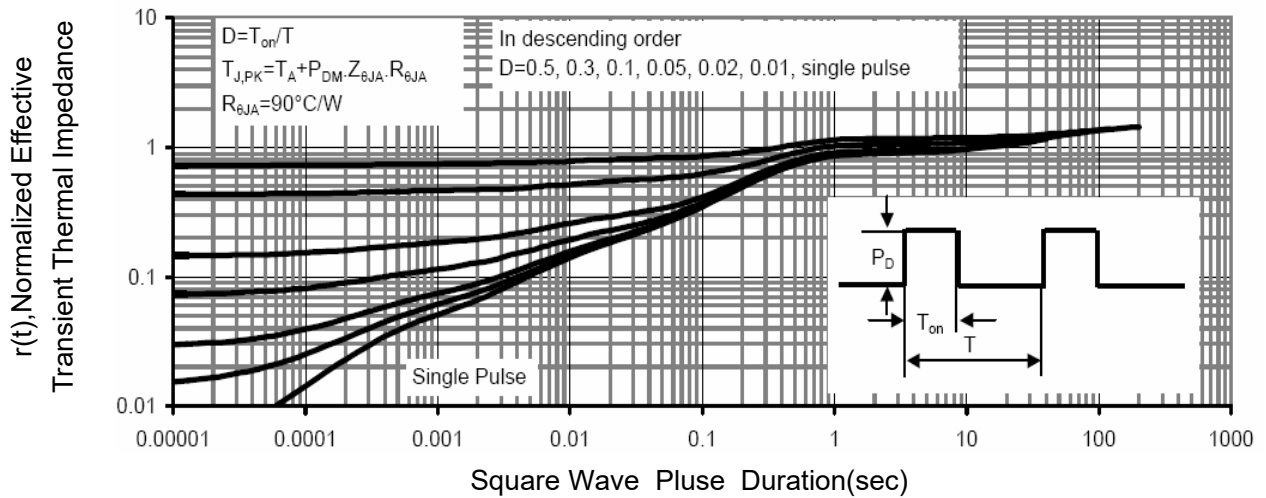
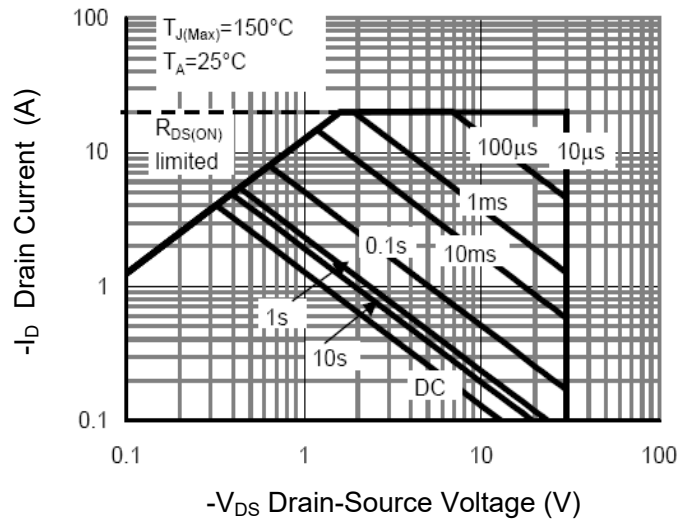
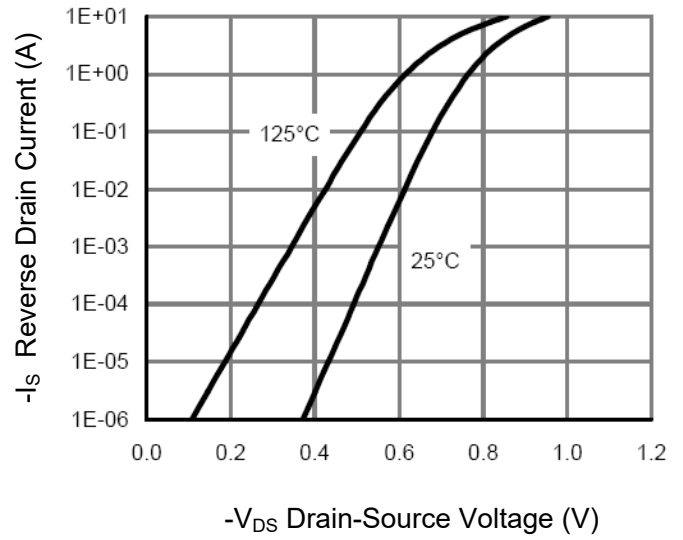
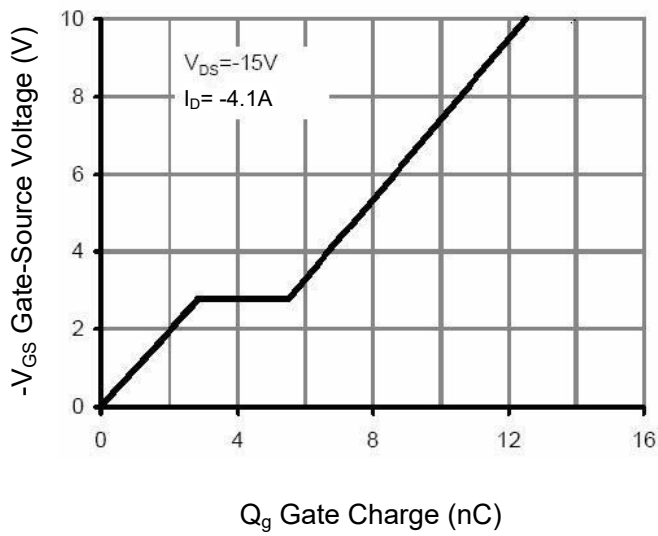
Electrical Characteristics Curves





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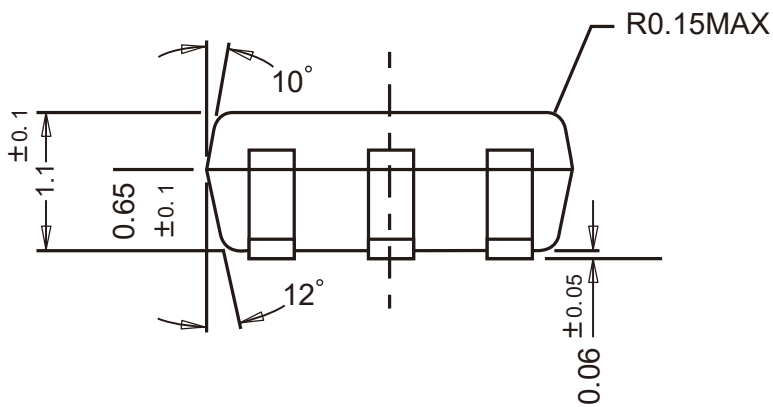
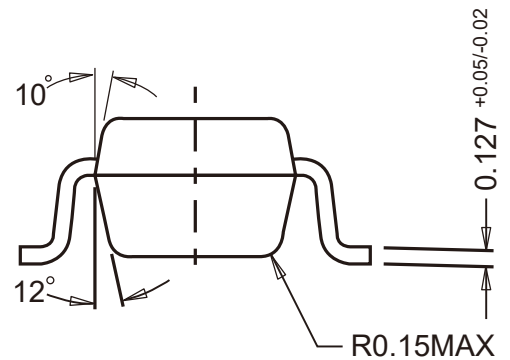
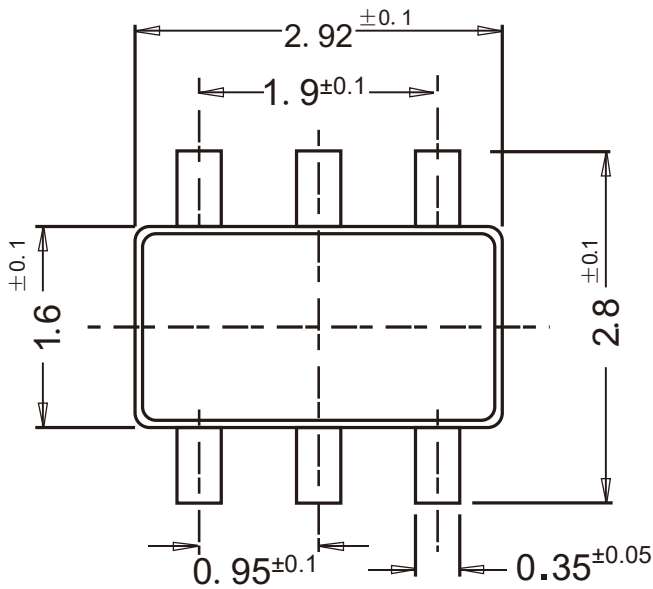
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Package Outline

SOT-23-6

Dimensions in mm

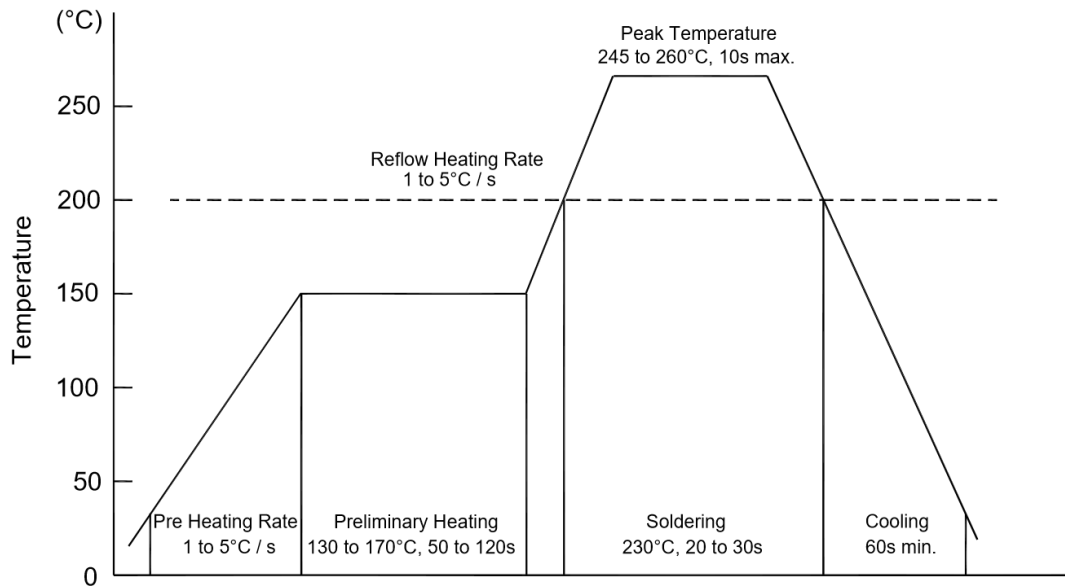


Ordering Information

Device	Package	Shipping
PJM6807CSG	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

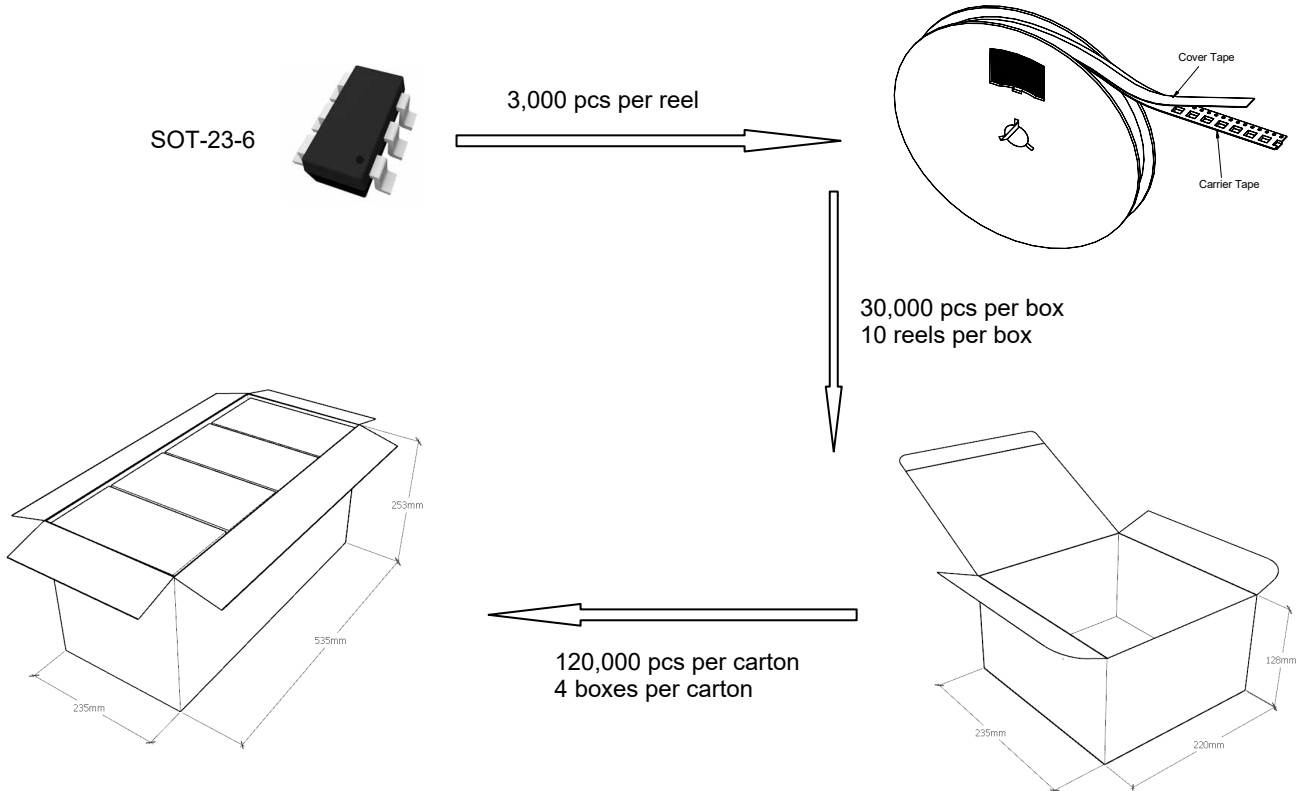


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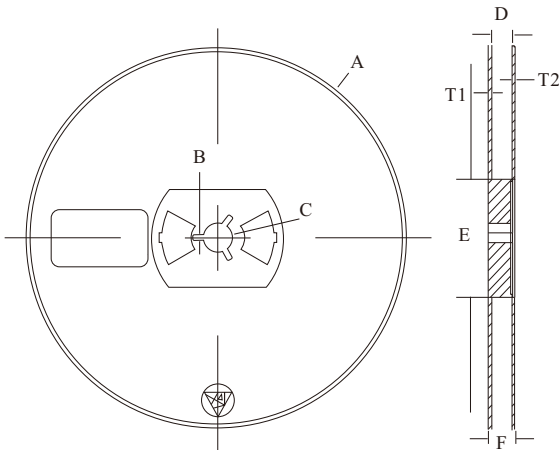
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Package Specifications

- The method of packaging

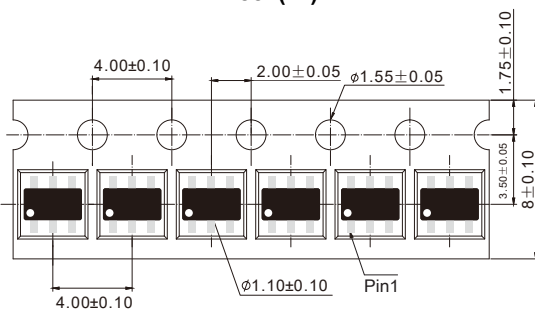


◆ Embossed tape and reel data



Symbol	Value (unit: mm)
A	Ø 177.8±1
B	2.7±0.2
C	Ø 13.5±0.2
E	Ø 54.5±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)