



PJM2305PSA

P-Channel Power MOSFET

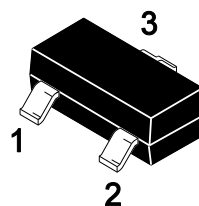
Features

- Fast switching
- Low gate charge and $R_{DS(ON)}$
- Low reverse transfer capacitances

Application

- Load switch and in PWM applications
- Power management

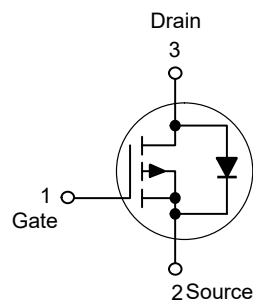
SOT-23



1. Gate 2. Source 3. Drain

Marking: S5

Schematic Diagram



Absolute Maximum Ratings

Ratings at $T_A = 25^\circ\text{C}$ unless otherwise specified.

Parameter	Symbol	Value	Units
Drain-Source Voltage	$-V_{DS}$	12	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	$-I_D$	4.1	A
Power Dissipation	P_D	1.4	W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	$^\circ\text{C}$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient ^{Note1}	$R_{\theta JA}$	89	$^\circ\text{C/W}$



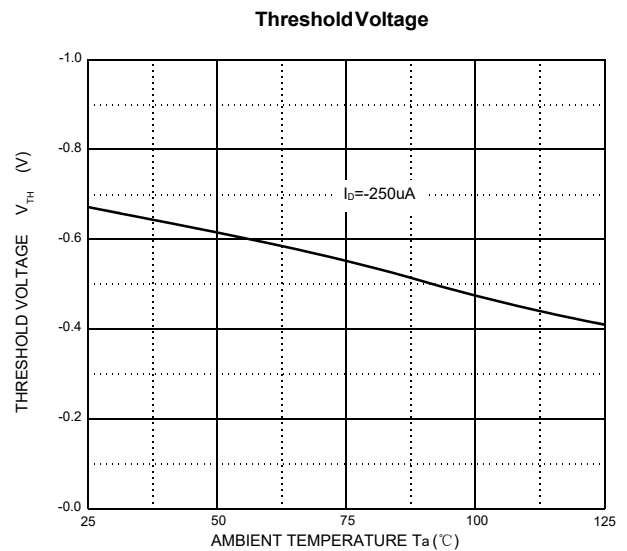
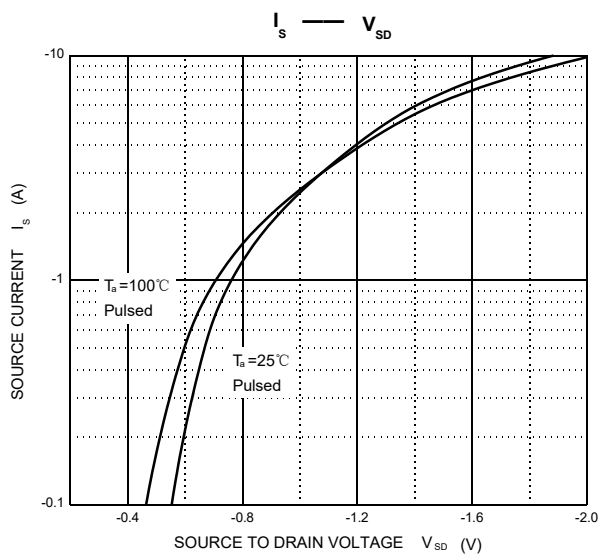
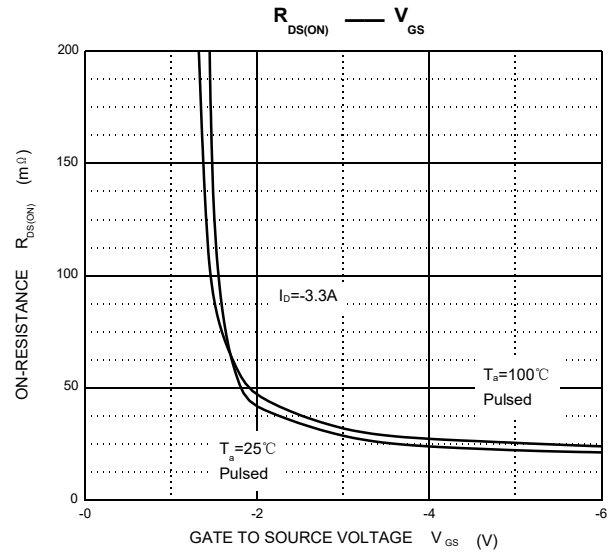
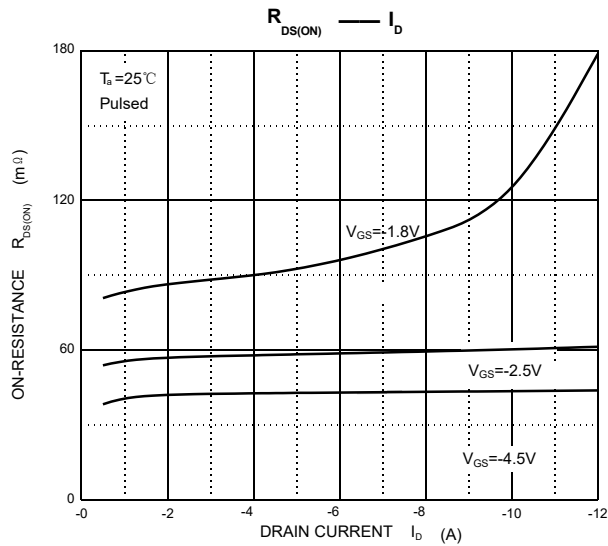
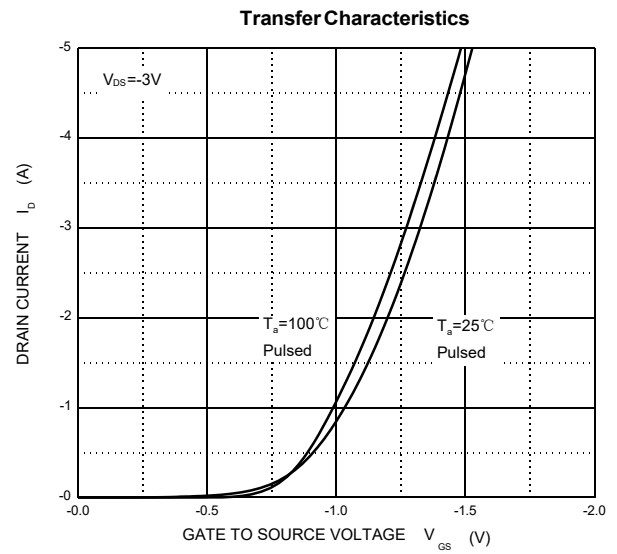
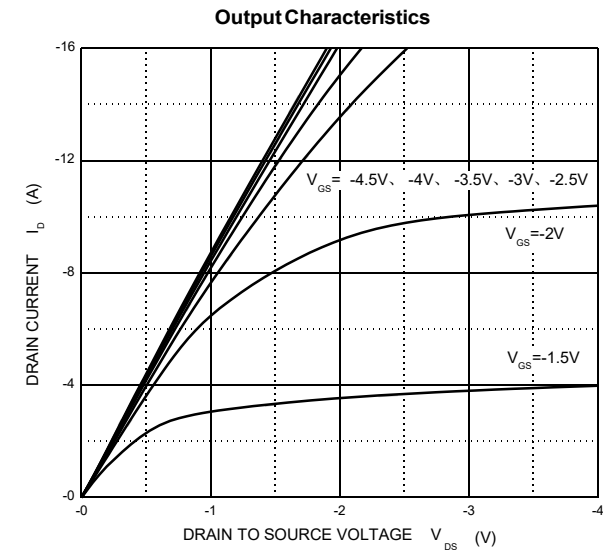
Electrical Characteristics ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Type	Max	Units
Static Characteristics						
Drain-source breakdown voltage	$-V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	12			V
Drain to Source Leakage Current	$-I_{DSS}$	$V_{DS} = -12V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage ^{Note1}	$-V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	0.5		0.9	V
Drain-source on-resistance ^{Note1}	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -3.5A$		45	60	m Ω
		$V_{GS} = -2.5V, I_D = -3A$		55	70	m Ω
		$V_{GS} = -1.8V, I_D = -2.0A$		75	90	m Ω
Forward tranconductance ^{Note1}	g_{FS}	$V_{DS} = -5V, I_D = -4.1A$	6			S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -4V, V_{GS} = 0V, f = 1MHz$		740		pF
Output Capacitance	C_{oss}			290		
Reverse Transfer Capacitance	C_{rss}			190		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$I_D = -3.3A, V_{DD} = -4V,$ $V_{GS} = -4.5V, R_{GEN} = 1\Omega,$		13		ns
Turn-on rise time	t_r			35		
Turn-off delay time	$t_{d(off)}$			32		
Turn-off fall time	t_f			10		
Total gate charge	Q_g	$V_{DD} = -4V, V_{GS} = -4.5V, I_D = -4.1A$ $V_{DD} = -4V, V_{GS} = -2.5V, I_D = -4.1A$		4.5	9	nC
Gate-source charge	Q_{gs}			1.2		
Gate-drain charge	Q_{gd}			1.6		
Source-Drain Diode characteristics						
Diode Forward voltage	$-V_{DS}$	$V_{GS} = 0V, I_S = -3.3A$			1.2	V
Continuous source-drain diode current	$-I_S$				1.4	A

Note: 1. Pulse Test ; Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.



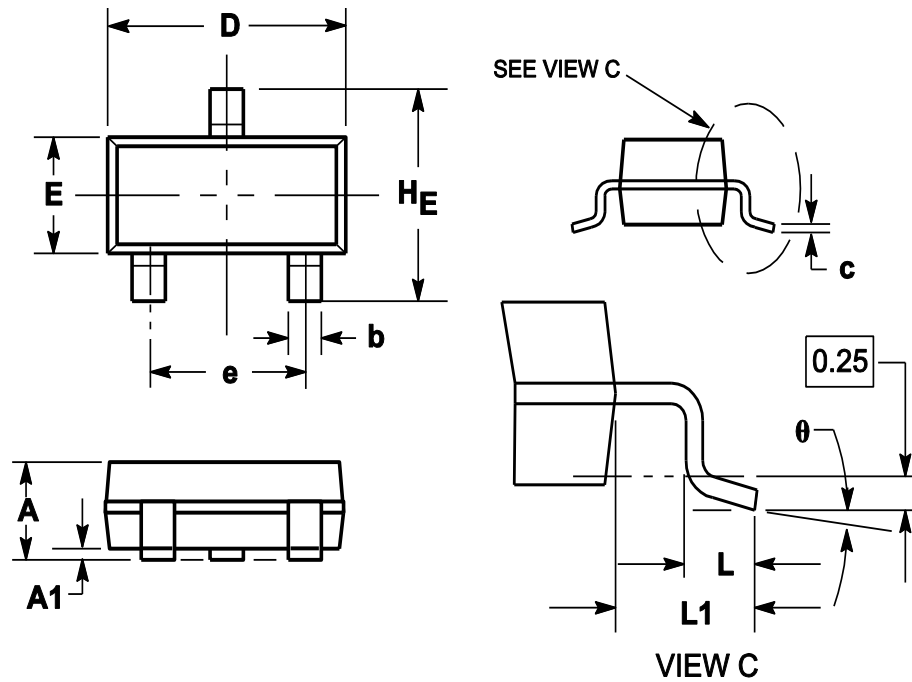
Typical Characteristic Curves



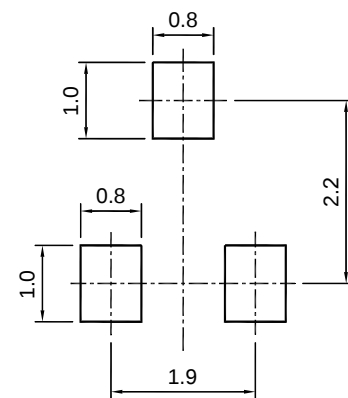


Package Outline

SOT-23



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.050	0.100
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
HE	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0°		8°



SOT-23 (TO-236)

Recommended soldering pad

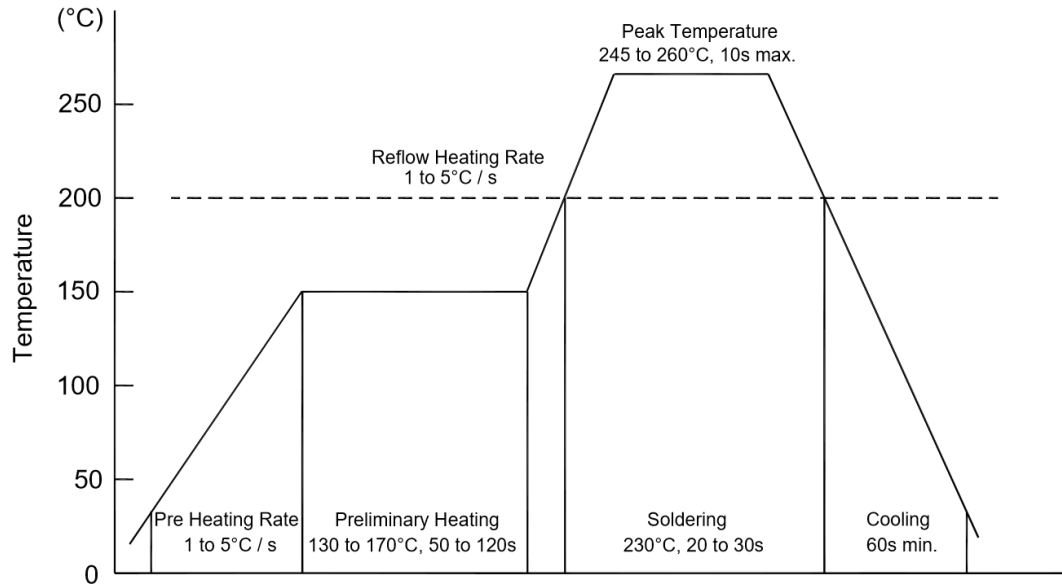
Ordering Information

Device	Package	Shipping
PJM2305PSA	SOT-23	3000PCS/Reel&Tape



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



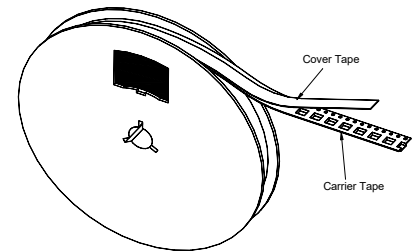
Package Specifications

- The method of packaging

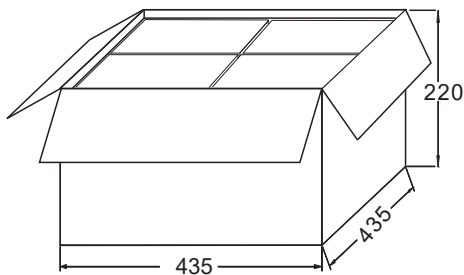
SOT-23 (TO-236)



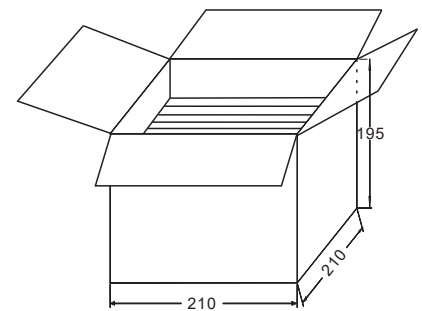
3,000 pcs per reel



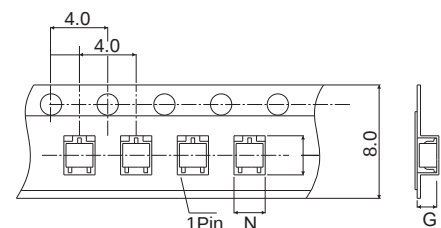
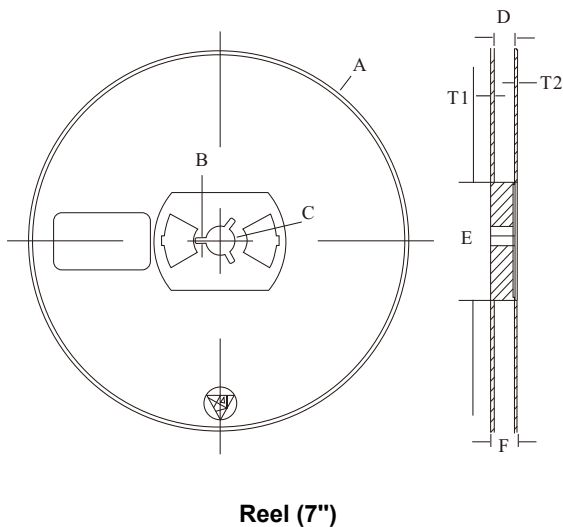
30,000 pcs per box
10 reels per box



120,000 pcs per carton
4 boxes per carton



◆ Embossed tape and reel data



Tape (8mm)

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
N	3.15±0.1
G	1.25±0.1