



PJM2307PSA

P- Enhancement Mode Field Effect Transistor

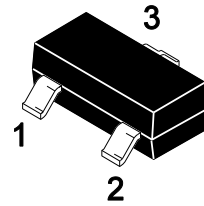
Features

- $V_{DS} = -30V, I_D = -2.7A$
 $R_{DS(ON)} = 110m\Omega$ (Typ.) @ $V_{GS} = -4.5V$
 $R_{DS(ON)} = 73m\Omega$ (Typ.) @ $V_{GS} = -10V$
- Low gate charge and $R_{DS(ON)}$
- Low reverse transfer capacitances

Application

- Load switch and in PWM applications
- Power management

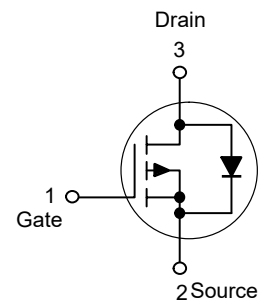
SOT-23



1. Gate 2. Source 3. Drain

Marking: R7

Schematic Diagram



Absolute Maximum Ratings

Ratings at $T_C = 25^\circ C$ unless otherwise specified.

Parameter	Symbol	Value	Units
Drain-Source Voltage	$-V_{DS}$	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$-I_D$	2.7	A
Power Dissipation	P_D	0.9	W
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55 to 150	$^\circ C$
Thermal Characteristics			
Parameter	Symbol	Typ.	Units
Maximum Junction-to-Ambient ^{Note1}	$R_{\theta JA}$	139	$^\circ C/W$



Electrical Characteristics

T_A=25°C unless otherwise noted

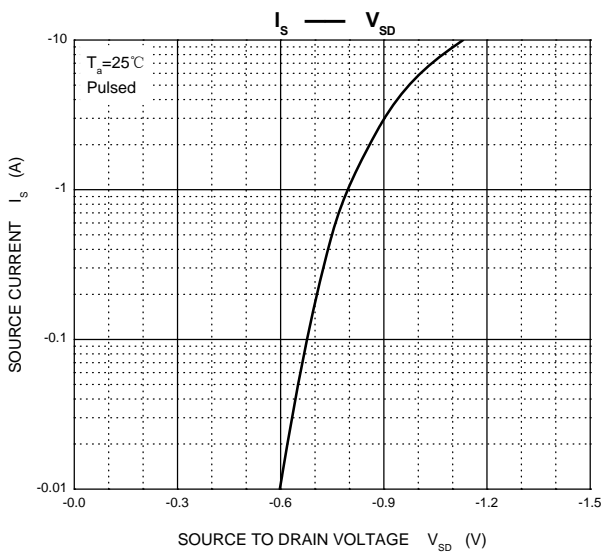
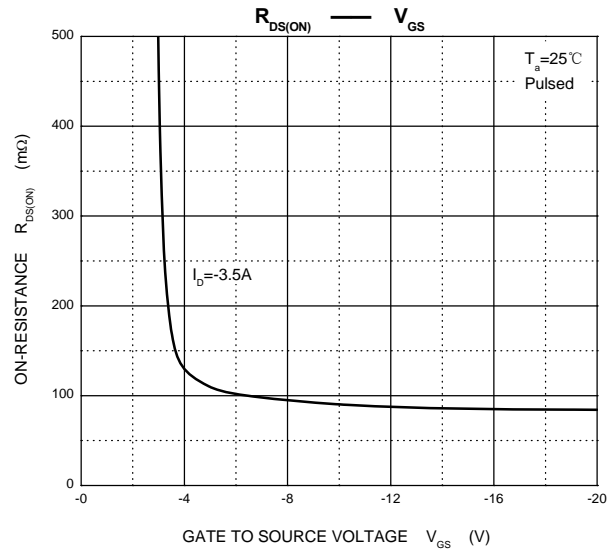
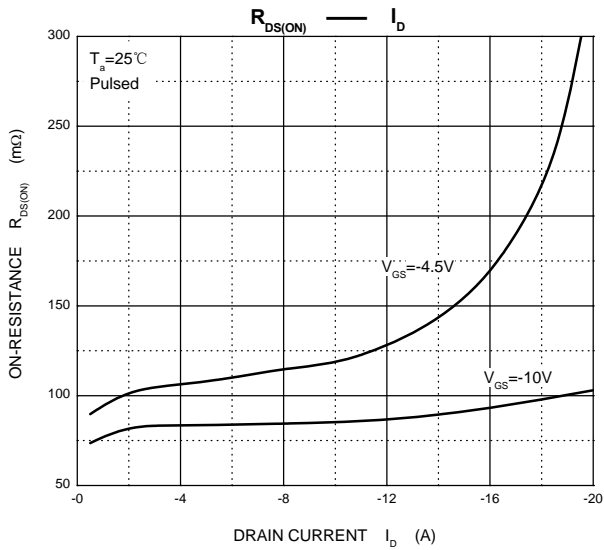
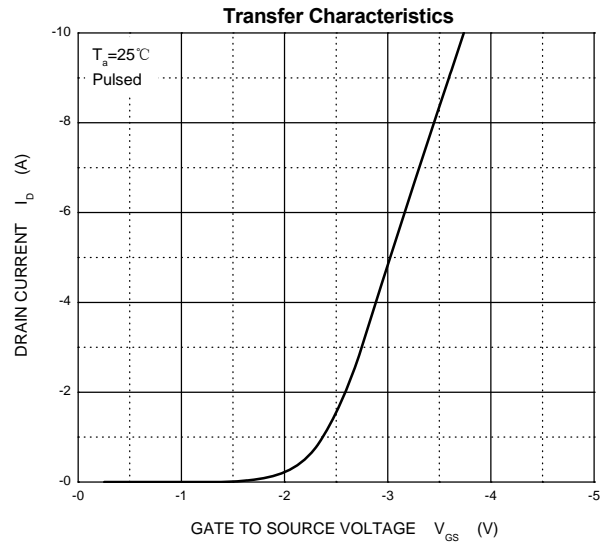
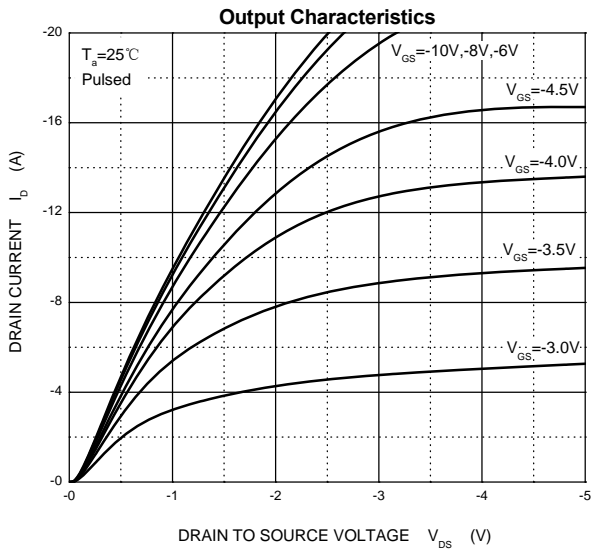
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	-V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	30			V
Gate-Source Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V			±100	nA
Zero Gate Voltage Drain Current	-I _{DSS}	V _{DS} = -30V, V _{GS} = 0V			1	μA
Gate threshold voltage ^{Note2}	-V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	1		3	V
Drain-Source On-State Resistance ^{Note2}	R _{DS(on)}	V _{GS} = -4.5V, I _D = -2.5A		110	138	mΩ
		V _{GS} = -10V, I _D = -3.5A		73	88	
Forward Transconductance ^{Note2}	g _{fs}	V _{DS} = -10V, I _D = -3.5A		7		S
Dynamic Characteristics						
Input Capacitance	C _{ISS}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz		340		pF
Output Capacitance	C _{OSS}			67		
Reverse Transfer Capacitance	C _{ISS}			51		
Switching Characteristics						
Total Gate Charge	Q _g	V _{DS} = -15V, V _{GS} = -4.5V, I _D = -2.5A		4.1	6.2	nC
Gate-Source Charge	Q _{gs}			1.3		
Gate-Drain Charge	Q _{gd}			1.8		
Turn-On Delay Time	t _{d(on)}	V _{DD} = -15V, R _L = 15Ω, I _D = -1A, V _{GEN} = -4.5V, R _g = 1Ω		40	60	ns
Rise Time	t _r			40	60	
Turn-Off Delay Time	t _{d(off)}			20	40	
Fall Time	t _f			17	30	
Source-Drain Diode characteristics						
Body Diode Voltage	-V _{SD}	I _S = -0.75A, V _{GS} = 0		0.8	1.2	V

Notes:

1. Surface mounted on FR4 board, t ≤ 10 sec.
2. Pulse Test : pulse width < 300μs, duty cycle ≤ 2%.



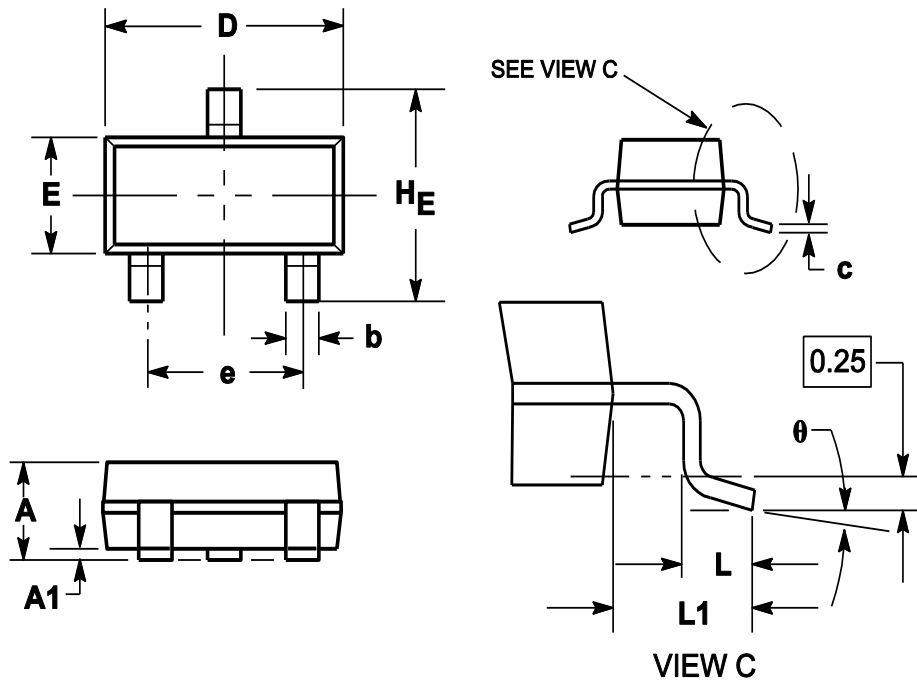
Typical Characteristics Curves



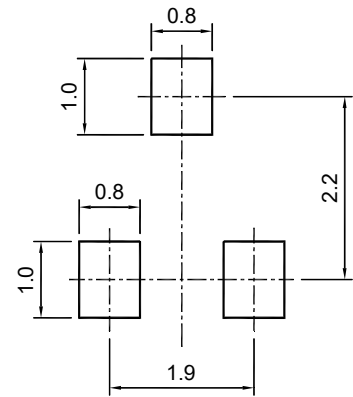


Package Outline

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°

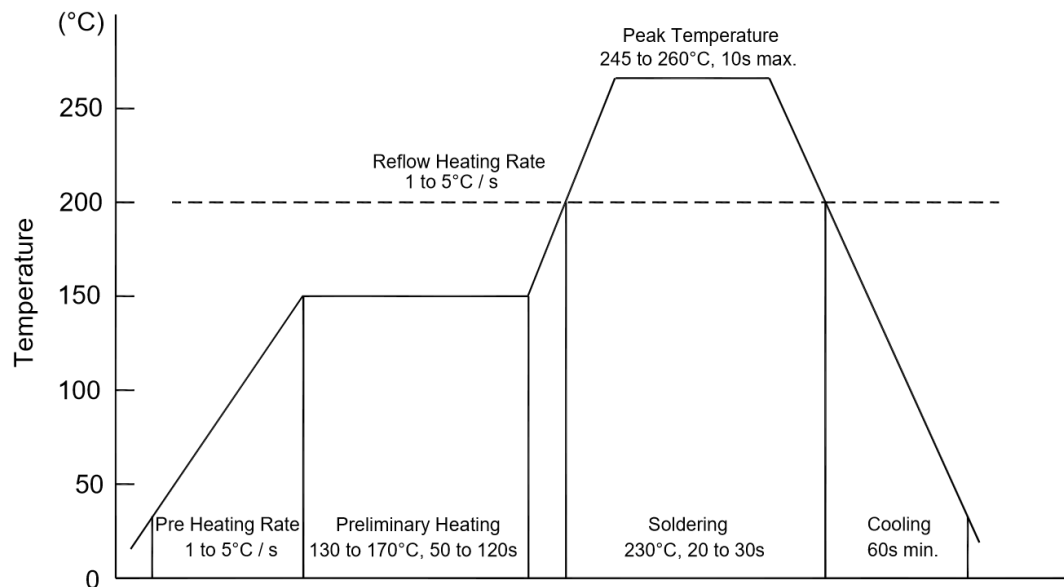


SOT-23 (TO-236)

Recommended Soldering Pad

Ordering Information

Device	Package	Shipping
PJM2307PSA	SOT-23	3000/Reel&Tape(7inch)

**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

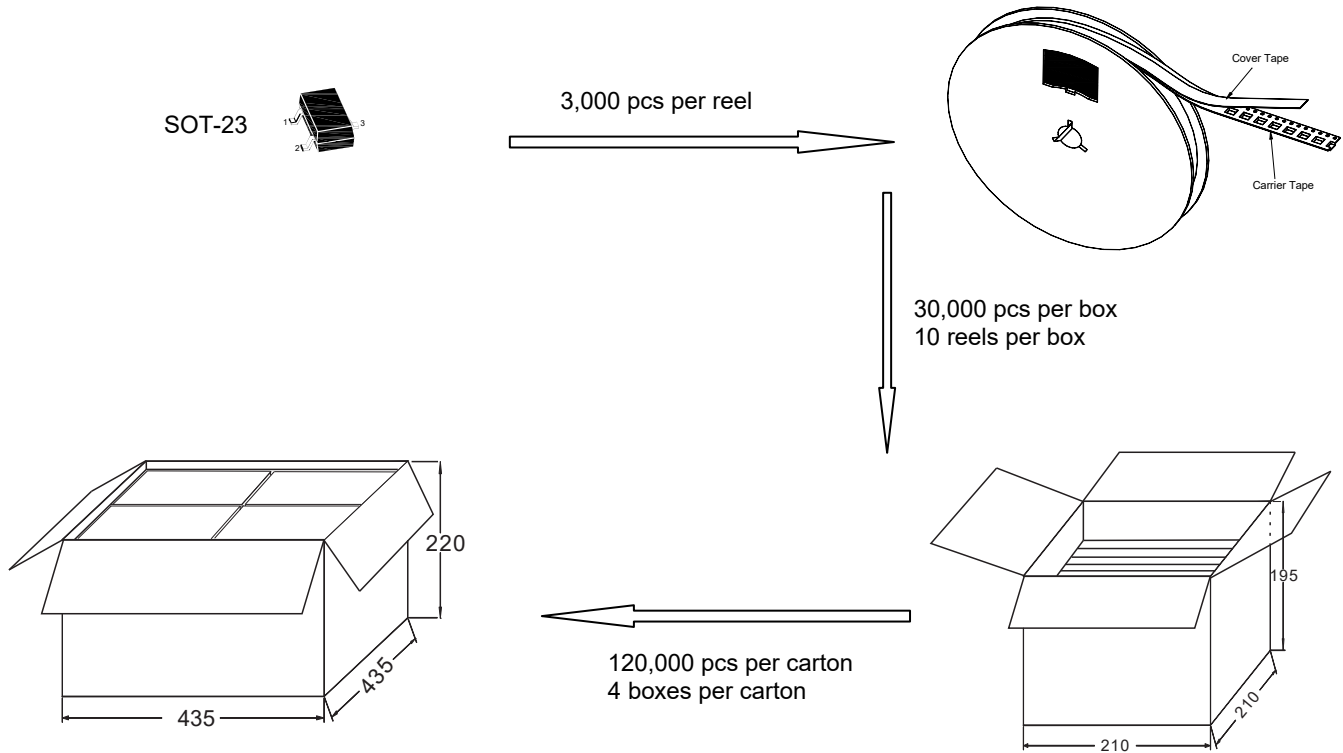


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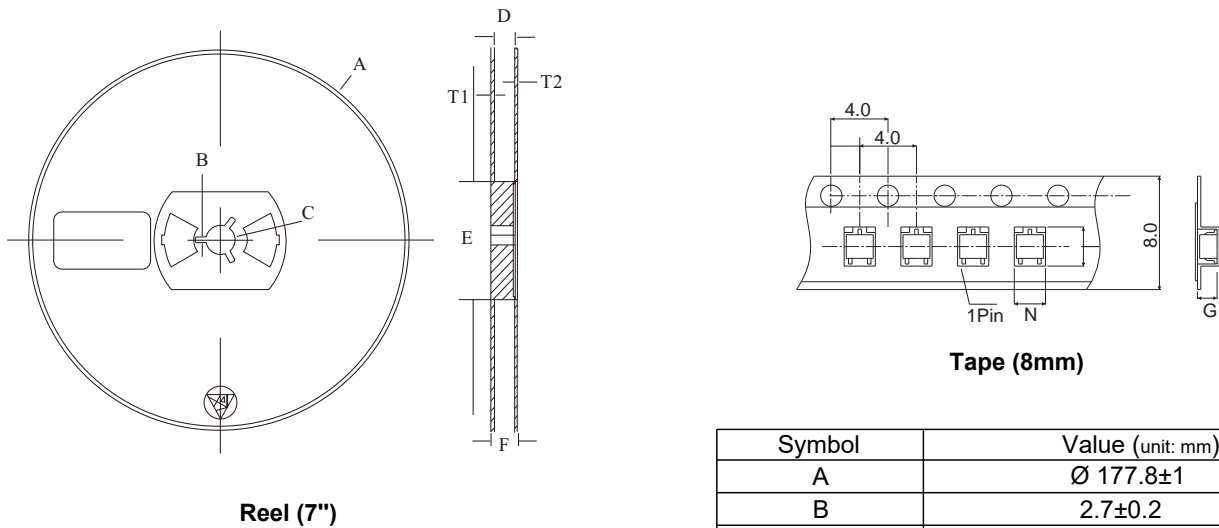
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Package Specifications

◆ The method of packaging



◆ Embossed tape and reel data



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