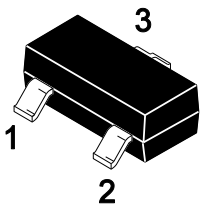
PJM2305PSA
P-Channel Power MOSFET

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

SOT-23

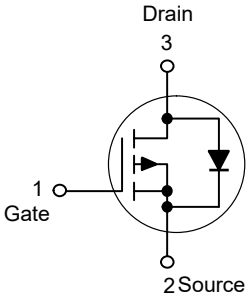


1. Gate 2.Source 3.Drain

Marking: S5

Application
- Load switch and in PWM applicatopns
- Power management

Schematic Diagram



Absolute Maximum Ratings
Ratings at T_A =25℃ 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	°C
Thermal Characteristics			
Parameter	**Symbol**	**Typ.**	**Units**
Maximum Junction-to-Ambient Note1	$R_{\theta JA}$	89	°C/W

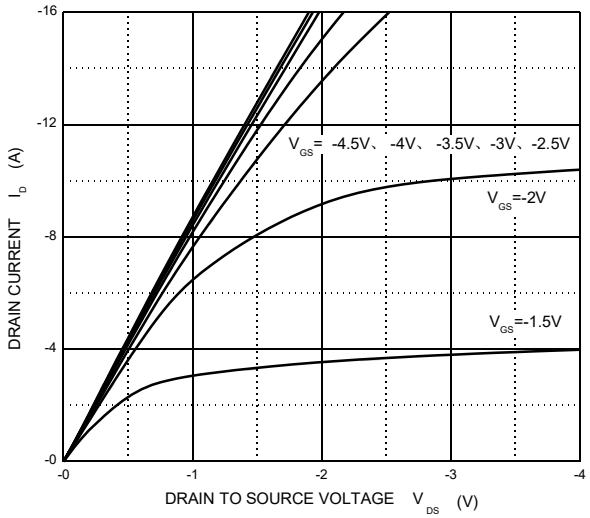
Electrical Characteristics (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Type	Max	Units
Static Characteristics						
Drain-source breakdown voltage	$-V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	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}= ±8V, V_{DS}= 0V			±100	nA
Gate threshold voltage Note1	$-V_{GS(th)}$	V_{DS} =V_{GS}, I_D = -250μA	0.5		0.9	V
Drain-source on-resistance Note1	$R_{DS(on)}$	V_{GS} = -4.5V, I_D= -3.5A		45	60	mΩ
		V_{GS} = -2.5V, I_D= -3A		55	70	mΩ
		V_{GS} =-1.8V, I_D= -2.0A		75	90	mΩ
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} =1Ω,		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		4.5	9	nC
Gate-source charge	Q_{gs}	V_{DD} =-4V,V_{GS} =-2.5V,I_D =-4.1A		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

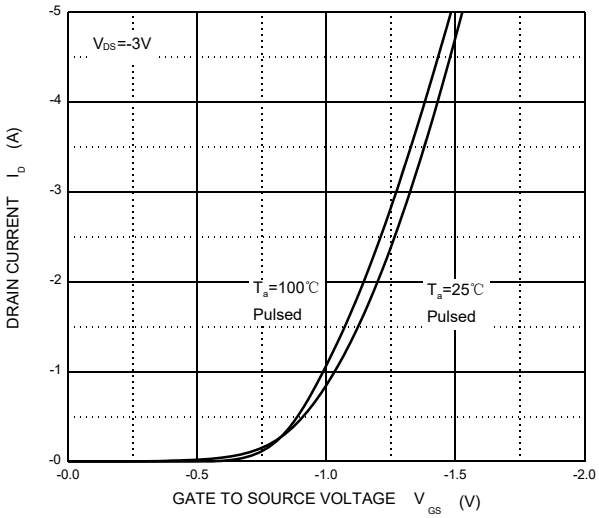
Note: 1. Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.

Typical Characteristic Curves

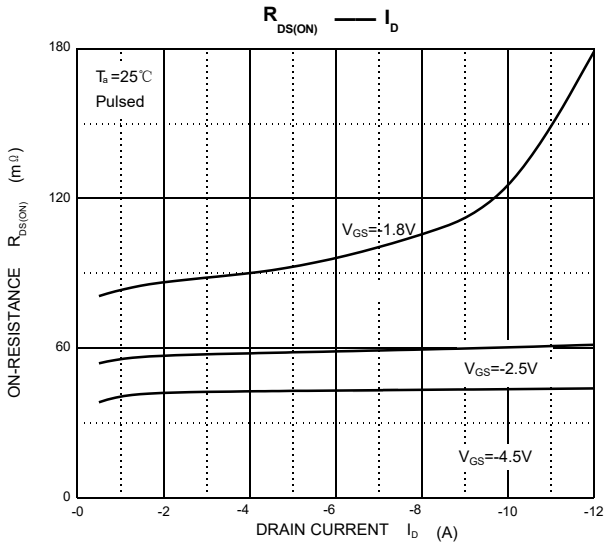
Output Characteristics



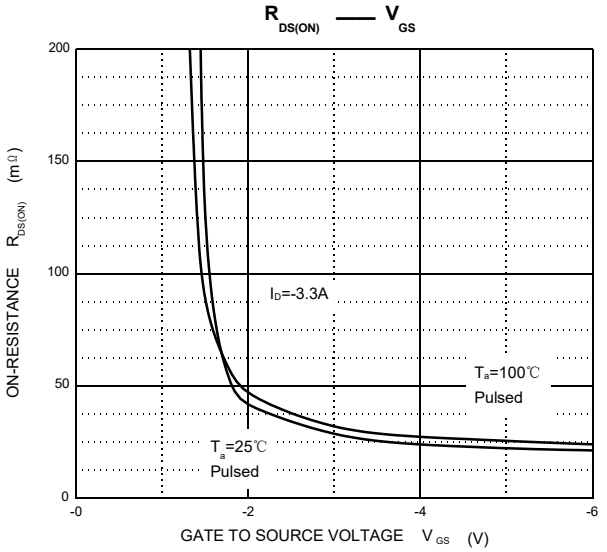
Transfer Characteristics



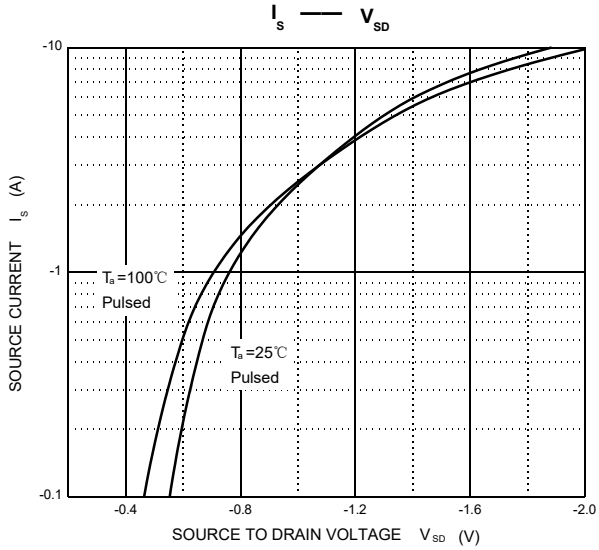
$R_{DS(ON)}$ —— I_D



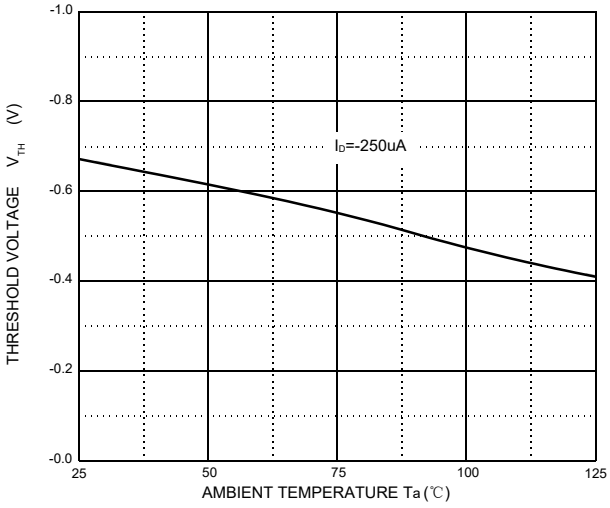
$R_{DS(ON)}$ —— V_{GS}



I_S —— V_{SD}

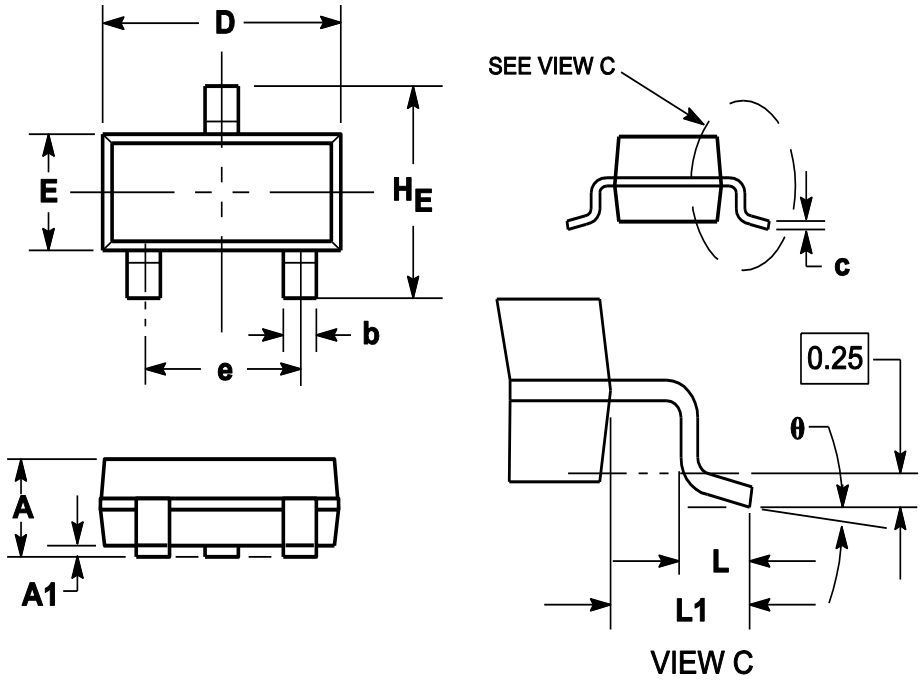


Threshold Voltage

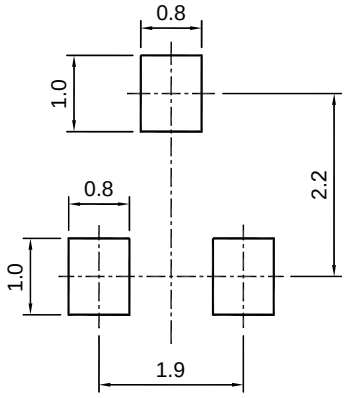


Package Outline

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
H_E	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0^o		8^o



SOT-23 (TO-236)

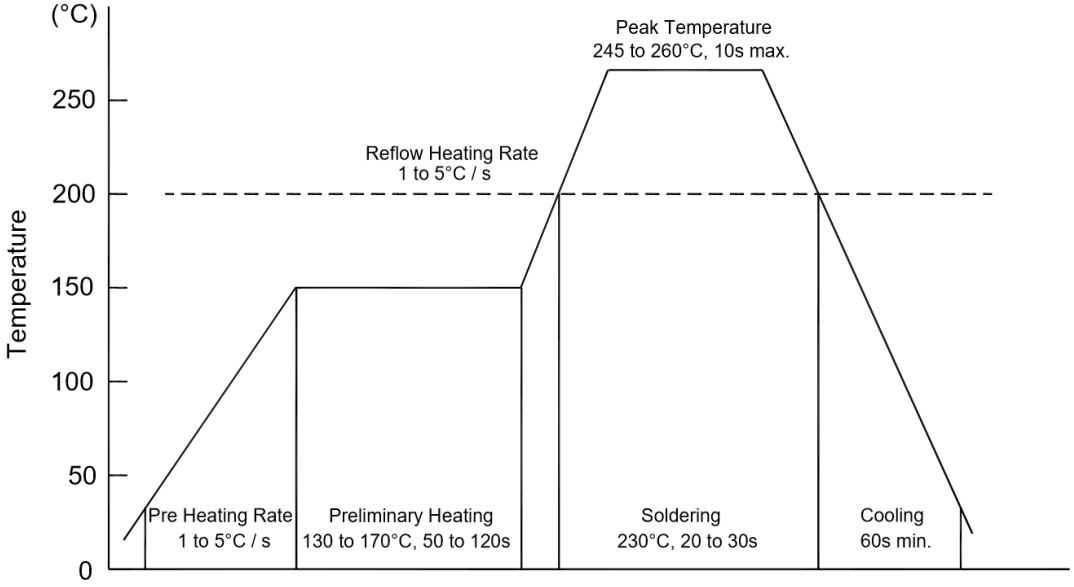
Recommended soldering pad

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

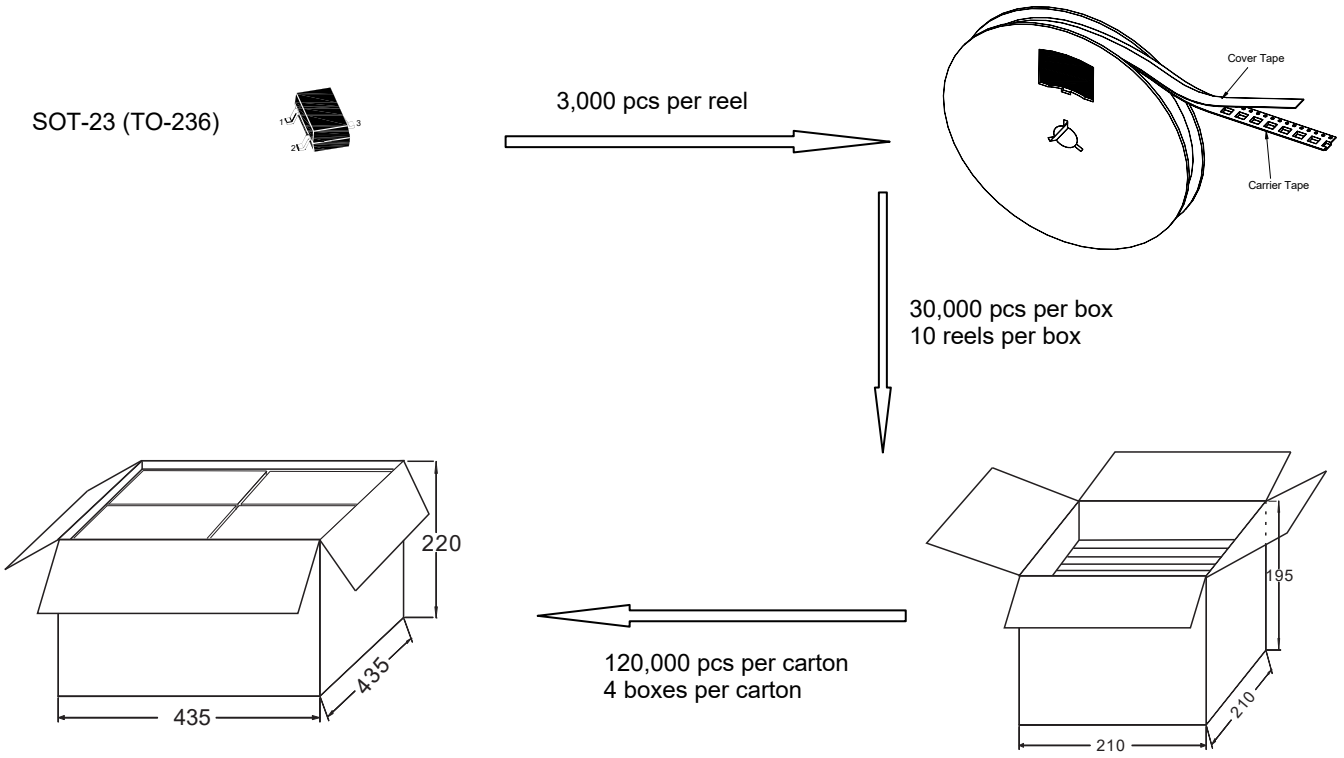
- Temperature: 370 ˚C
- Time: 3s max.
- Times: one time

◆ Storage conditions

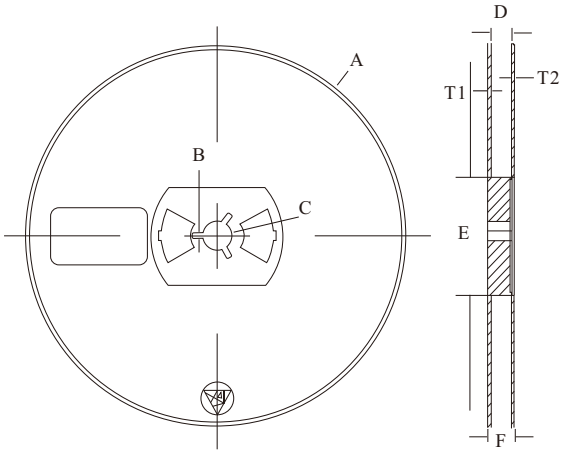
- **Temperature**
  5 to 40 ˚C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

Package Specifications

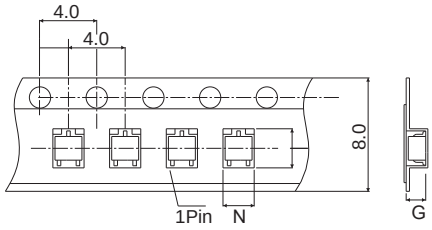
- The method of packaging



◆ Embossed tape and reel data



Reel (7")



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

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