



PJM2309PSA

P-Channel Power MOSFET

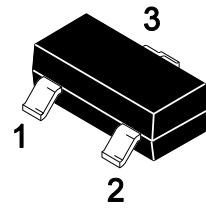
Features

- $V_{DS} = -60V$ $I_D = -2.0A$
- $R_{DS(ON)} = 200m\Omega(\text{max}) @ -10V$
- Halogen and Antimony Free

Applications

- Load Switch and in PWM Applications
- Power Management

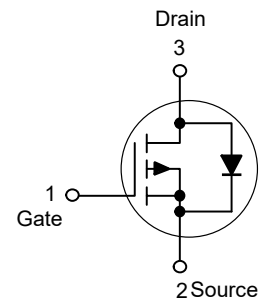
SOT-23



1. Gate 2. Source 3. Drain

Marking: S9

Schematic Diagram



Absolute Maximum Ratings

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

Parameter	Symbol	Value	Units
Drain-Source Voltage	$-V_{DS}$	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	$-I_D$	2	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	$R_{\theta JA}$	89	$^\circ\text{C/W}$



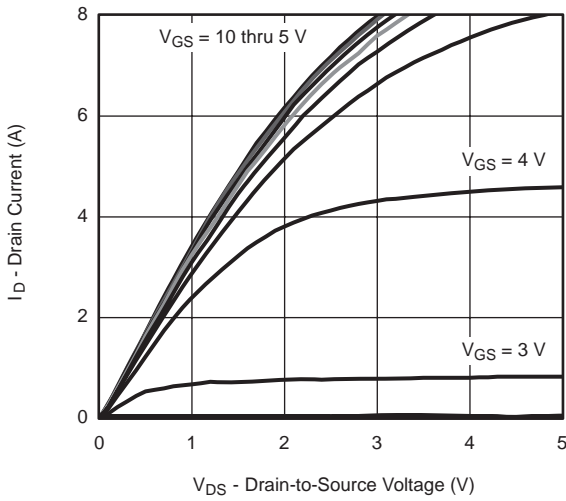
Electrical Characteristics ($T_C=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Units
Static Characteristics						
Drain-source breakdown voltage	$-V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	60	--	--	V
Drain to Source Leakage Current	$-I_{DSS}$	$V_{DS} = -60V, V_{GS} = 0V$	--	--	1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	--	--	± 100	nA
Gate threshold voltage ^{Note1}	$-V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	1.5	--	3	V
Drain-source on-resistance ^{Note1}	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -2A$	--	--	200	m Ω
		$V_{GS} = -4.5V, I_D = -1A$	--	--	400	m Ω
Forward transconductance ^{Note1}	g_{FS}	$V_{DS} = -5V, I_D = -2A$	--	6	--	S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$	--	850	--	pF
Output Capacitance	C_{oss}		--	65	--	
Reverse Transfer Capacitance	C_{rss}		--	28	--	
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$I_D = -1A, V_{DD} = -30V,$ $V_{GS} = -10V, R_{GEN} = 3\Omega,$ $R_L = 7.5\Omega,$	--	7	--	ns
Turn-on rise time	t_r		--	3	--	
Turn-off delay time	$t_{d(off)}$		--	28	--	
Turn-off fall time	t_f		--	5.5	--	
Total gate charge	Q_g	$V_{DD} = -30V, V_{GS} = -10V, I_D = -2A$	--	22	--	nC
Gate-source charge	Q_{gs}		--	2.5	--	
Gate-drain charge	Q_{gd}		--	6	--	
Source-Drain Diode characteristics						
Continuous Source-Drain Diode Current	$-I_S$		--	--	1.4	A
Diode Forward voltage	$-V_{DS}$	$V_{GS} = 0V, I_S = -2A$	--	--	1.2	V

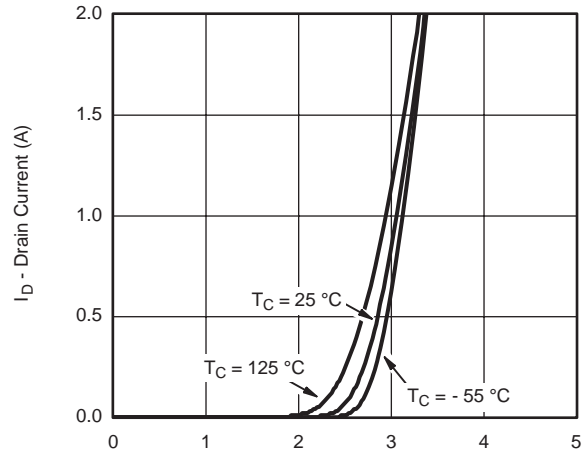
Notes: 1. Pulse test ; pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.



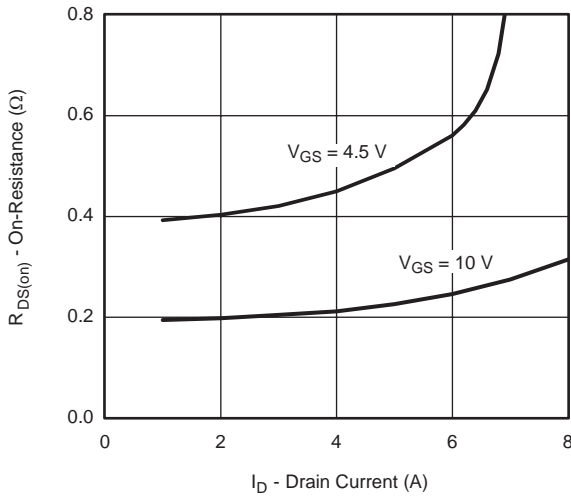
Typical Characteristic Curves



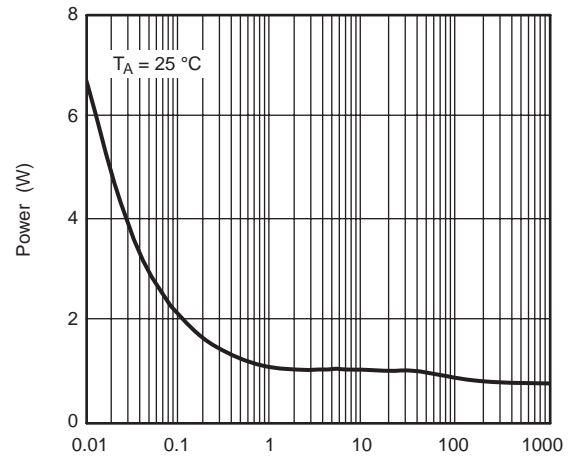
Output Characteristics



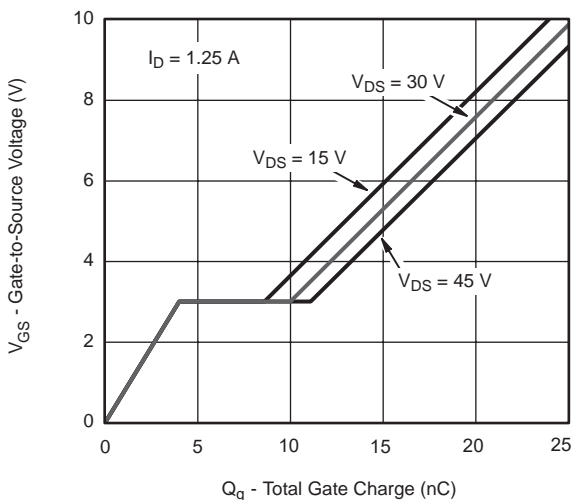
Transfer Characteristics



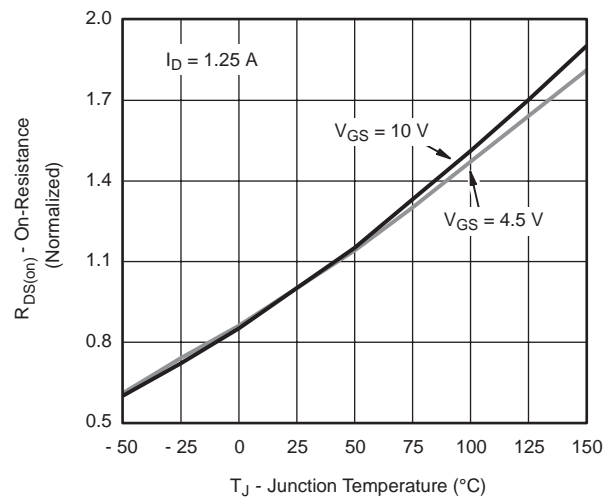
On-Resistance vs. Drain Current and Gate Voltage



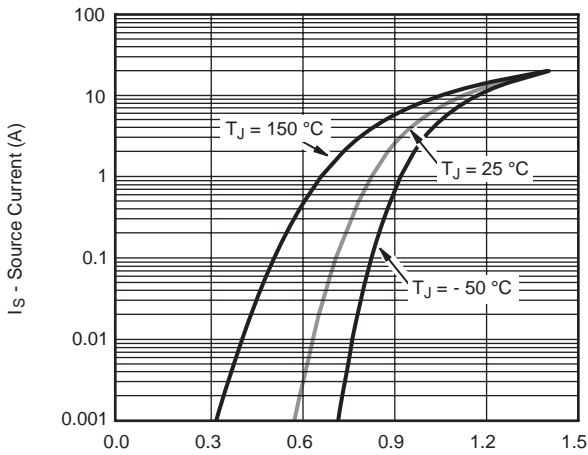
Single Pulse Power, Junction-to-Ambient



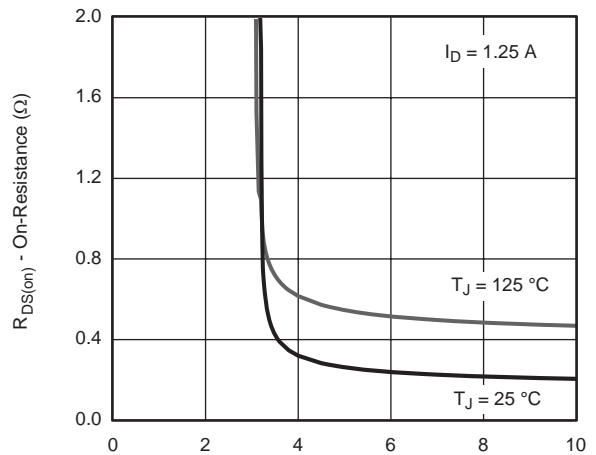
Gate Charge



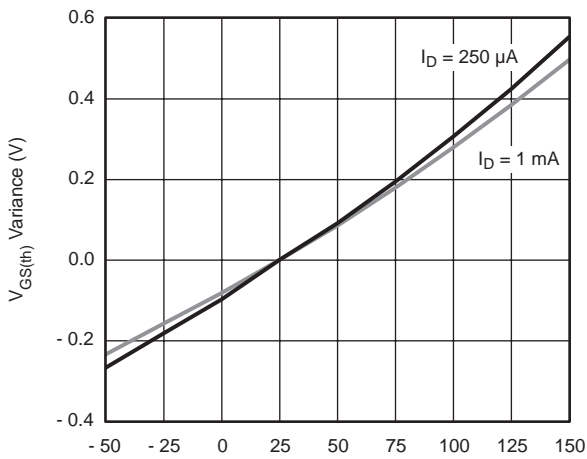
On-Resistance vs. Junction Temperature



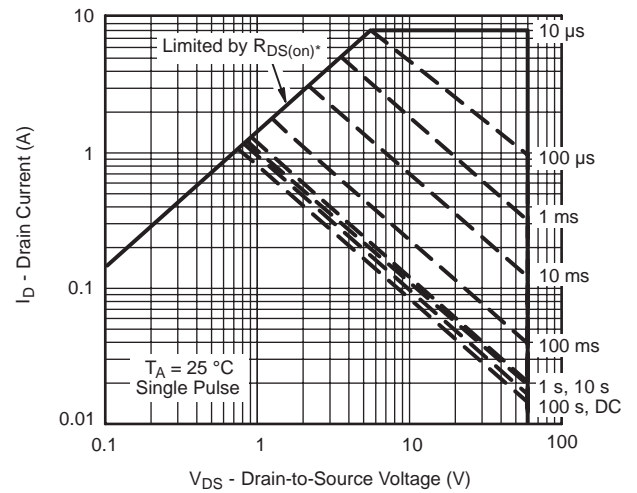
Source-Drain Diode Forward Voltage



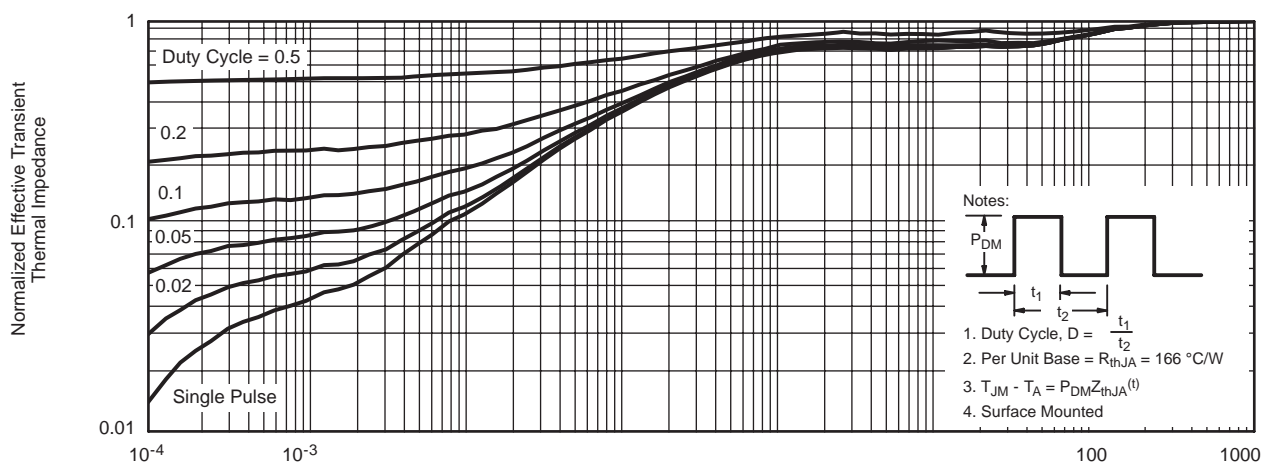
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage



Safe Operating Area, Junction-to-Ambient

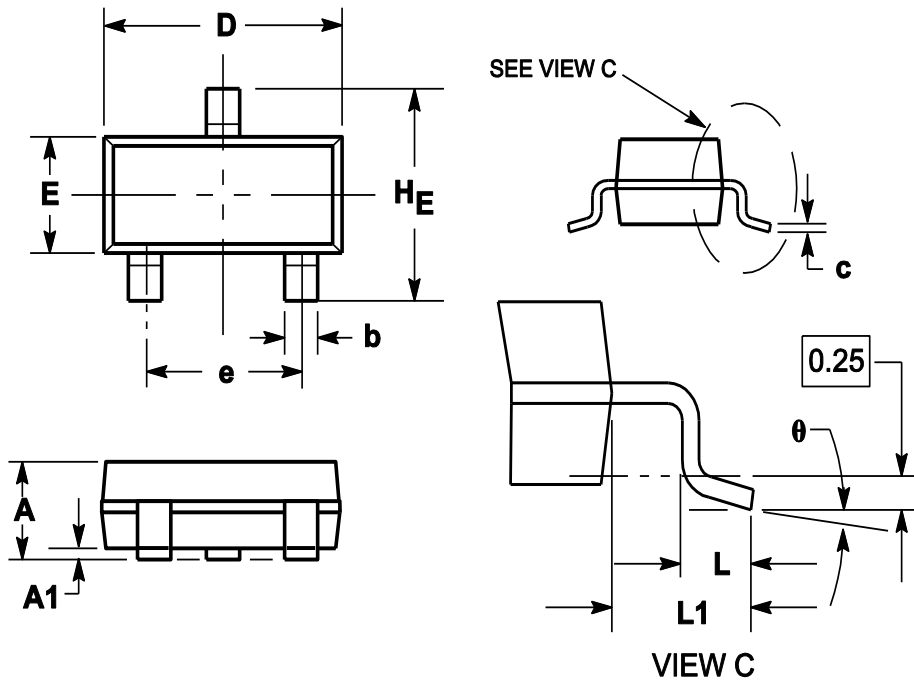


Normalized Thermal Transient Impedance, Junction-to-Ambient

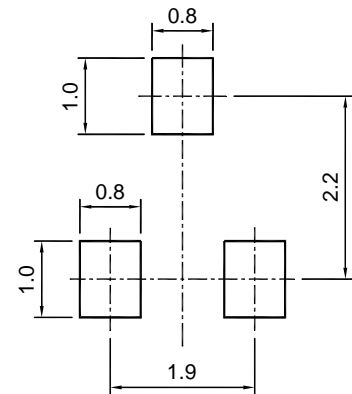


Package Outline

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

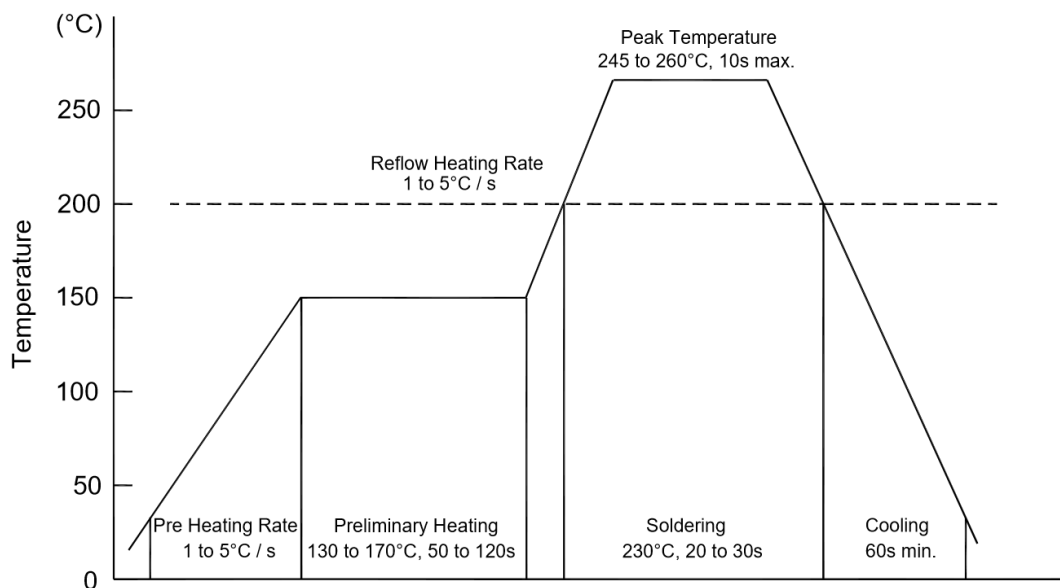
Ordering Information

Device	Package	Shipping
PJM2309PSA	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



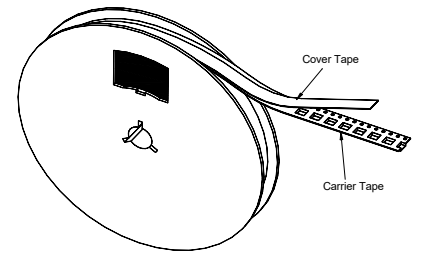
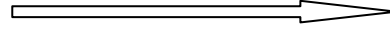
Package Specifications

- The method of packaging

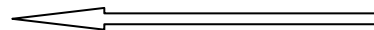
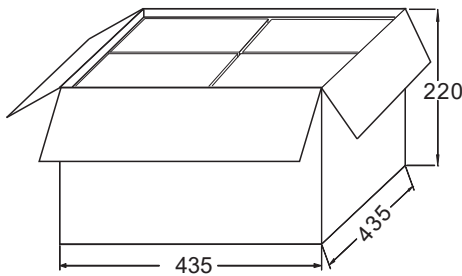
SOT-23 (TO-236)



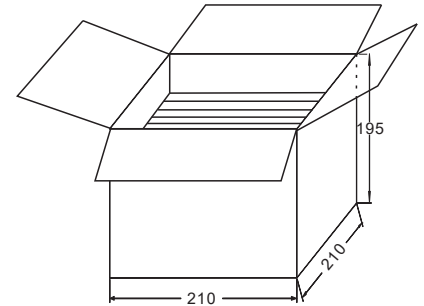
3,000 pcs per reel



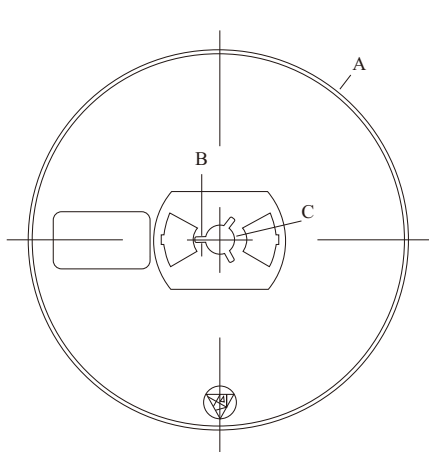
30,000 pcs per box
10 reels per box



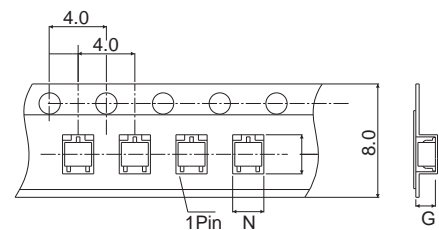
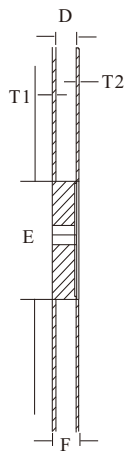
120,000 pcs per carton
4 boxes per carton



◆ **Embossed tape and reel data**



Reel (7")



Tape (8mm)

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

单击下面可查看定价，库存，交付和生命周期等信息

[>>PJSEMI\(平晶微\)](#)