



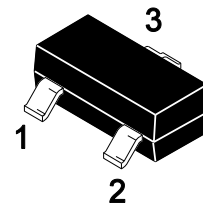
PJM3415PSA-4K

Silicon P-Channel Power MOSFET

Features

- Low Gate Charge and $R_{DS(on)}$
- ESD protected(HBM) up to 4KV

SOT-23



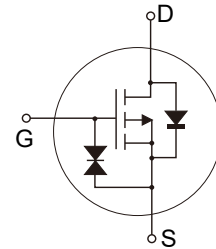
1. Gate 2.Source 3.Drain

Marking: 3415E

Application

- Load switch and in PWM applicatopns

Schematic Diagram



Absolute Maximum Ratings

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

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	$-V_{DS}$	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current	$-I_D$	4	A
Power Dissipation	P_D	1.25	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}	$R_{\theta JA}$	100	$^\circ\text{C/W}$



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

Parameter	Symbol	Test Condition	Min	Type	Max	Units
Static Characteristics						
Drain-source breakdown voltage	$-V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	20			V
Zero gate voltage drain current	$-I_{DSS}$	$V_{DS} = -20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 10V, V_{DS} = 0V$			± 50	μA
Gate threshold voltage ^{Note2}	$-V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	0.4		1	V
Drain-source on-resistance ^{Note2}	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = -4A$		33	50	m Ω
		$V_{GS} = -2.5V, I_D = -4A$		45	60	
		$V_{GS} = -1.8V, I_D = -2A$		63	90	
Forward tranconductance ^{Note2}	g_{FS}	$V_{DS} = -5V, I_D = -4A$	8			S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V, f = 1MHz$		1450		pF
Output Capacitance	C_{oss}			205		
Reverse Transfer Capacitance	C_{rss}			160		
Switching Characteristics						
Turn-on delay time	$t_{d(on)}$	$V_{DS} = -10V, V_{GS} = -4.5V, R_{GEN} = 3\Omega,$ $R_L = 2.5\Omega,$		9.5		ns
Turn-on rise time	t_r			17		
Turn-off delay time	$t_{d(off)}$			94		
Turn-off fall time	t_f			35		
Total gate charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -4A$		17.2		nC
Gate-source charge	Q_{gs}			1.3		
Gate-drain charge	Q_{gd}			4.5		
Source-Drain Diode characteristics						
Diode Forward voltage ^{Note1}	$-V_{DS}$	$V_{GS} = 0V, I_S = -1A$			1	V

Notes: 1. Surface Mounted on FR4 Board, $t \leq 10$ sec.

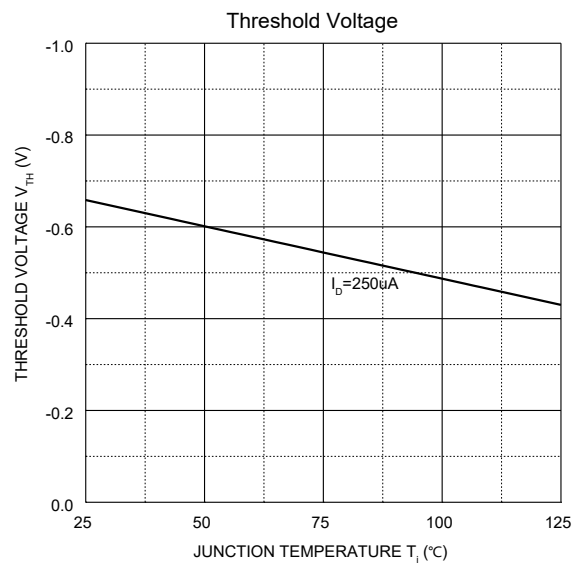
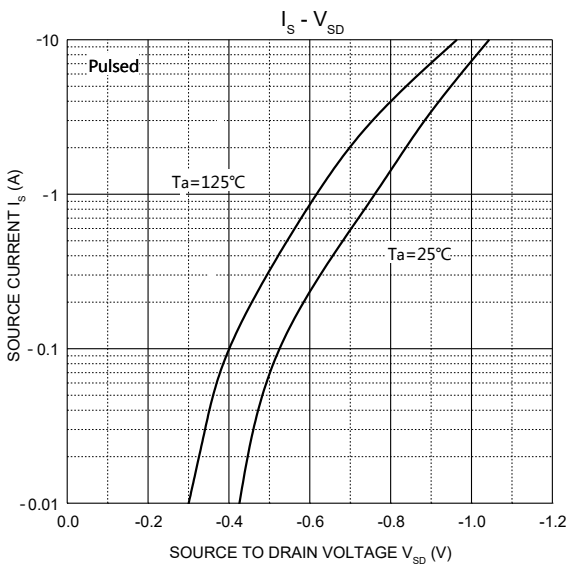
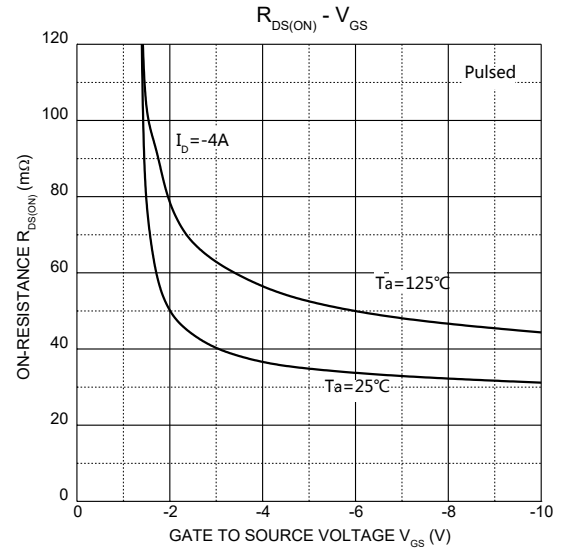
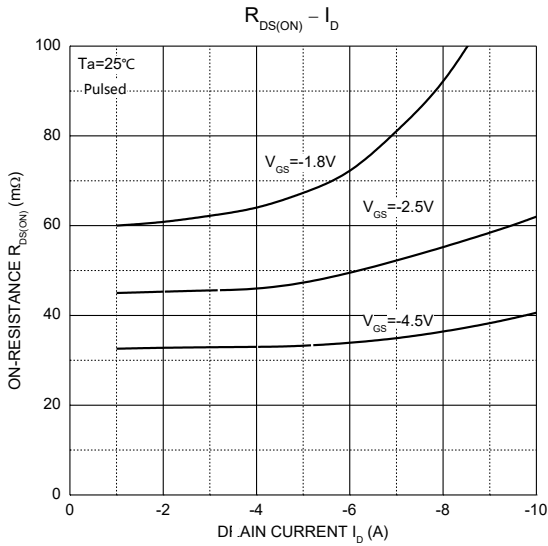
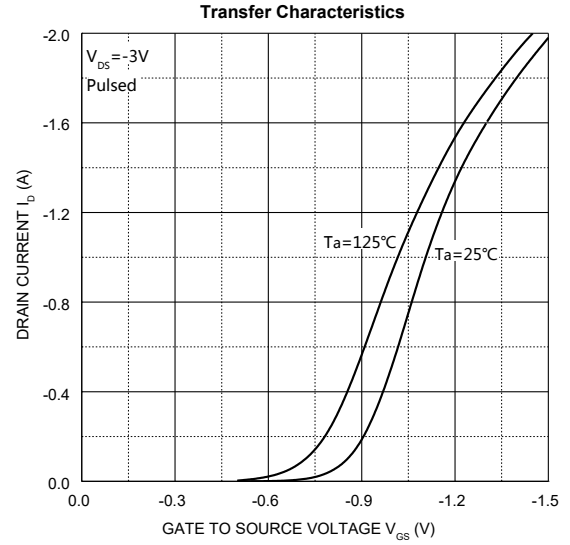
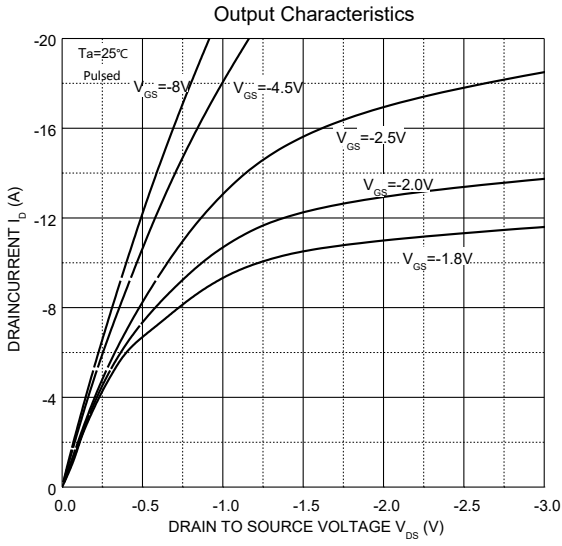
2. Pulse Test : Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Notices:

The MOSFET is a static-sensitive component and has strict requirements on the production environment. It is recommended to avoid static interference during storage and production. The temperature of the tin furnace or reflow oven do not exceed 260 degrees.



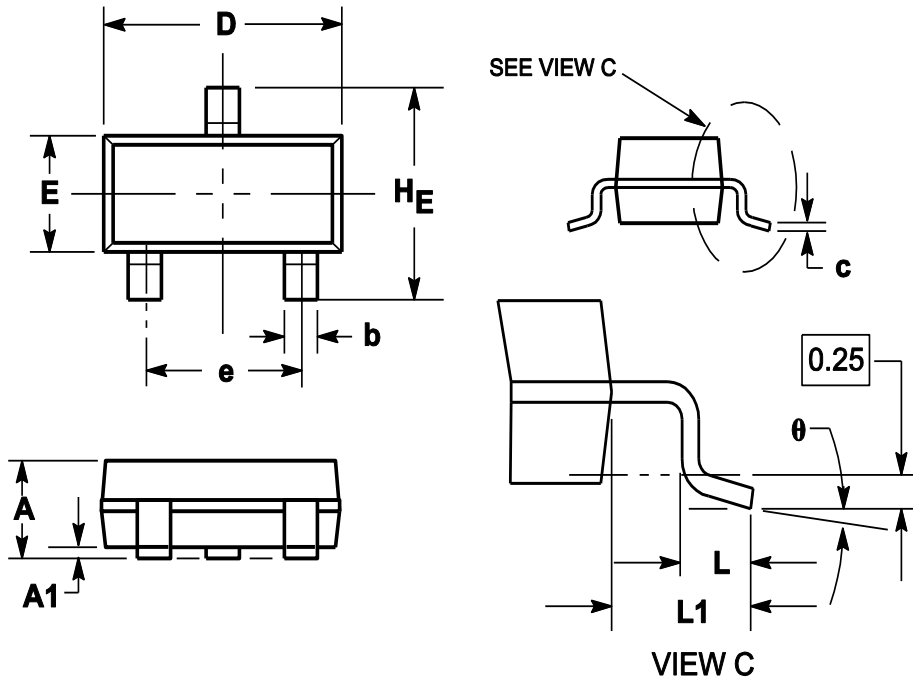
Typical Characteristic Curves



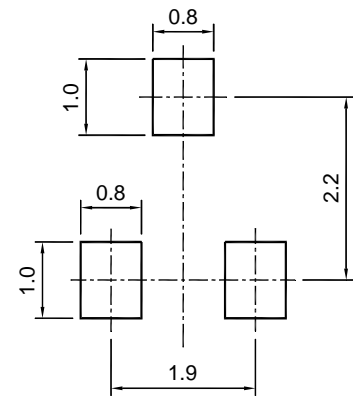


Package Outline

SOT-23
unit:mm



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

Recommended soldering pad

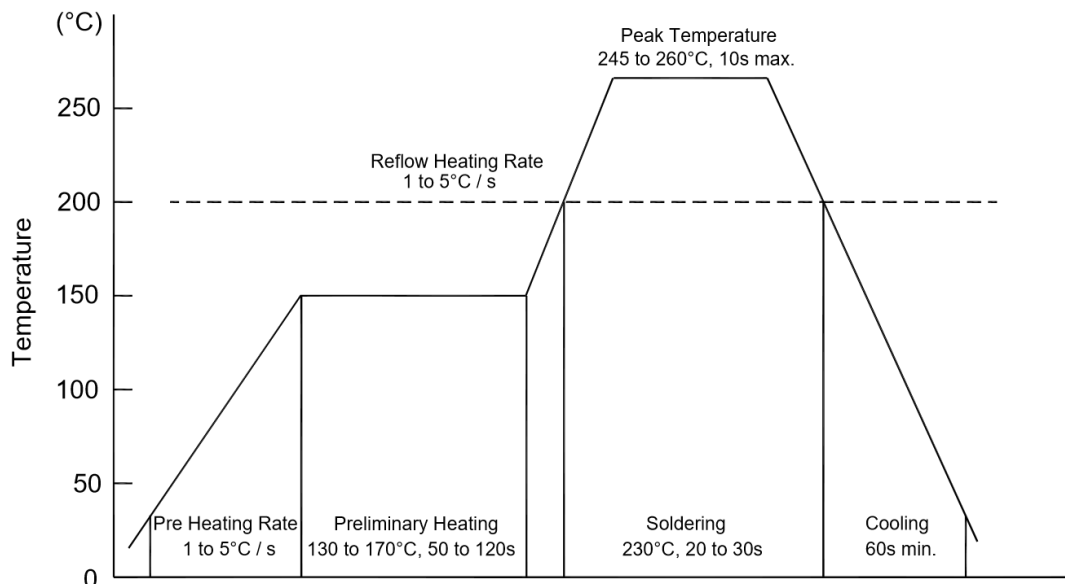
Ordering Information

Device	Package	Shipping
PJM3415PSA-4K	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

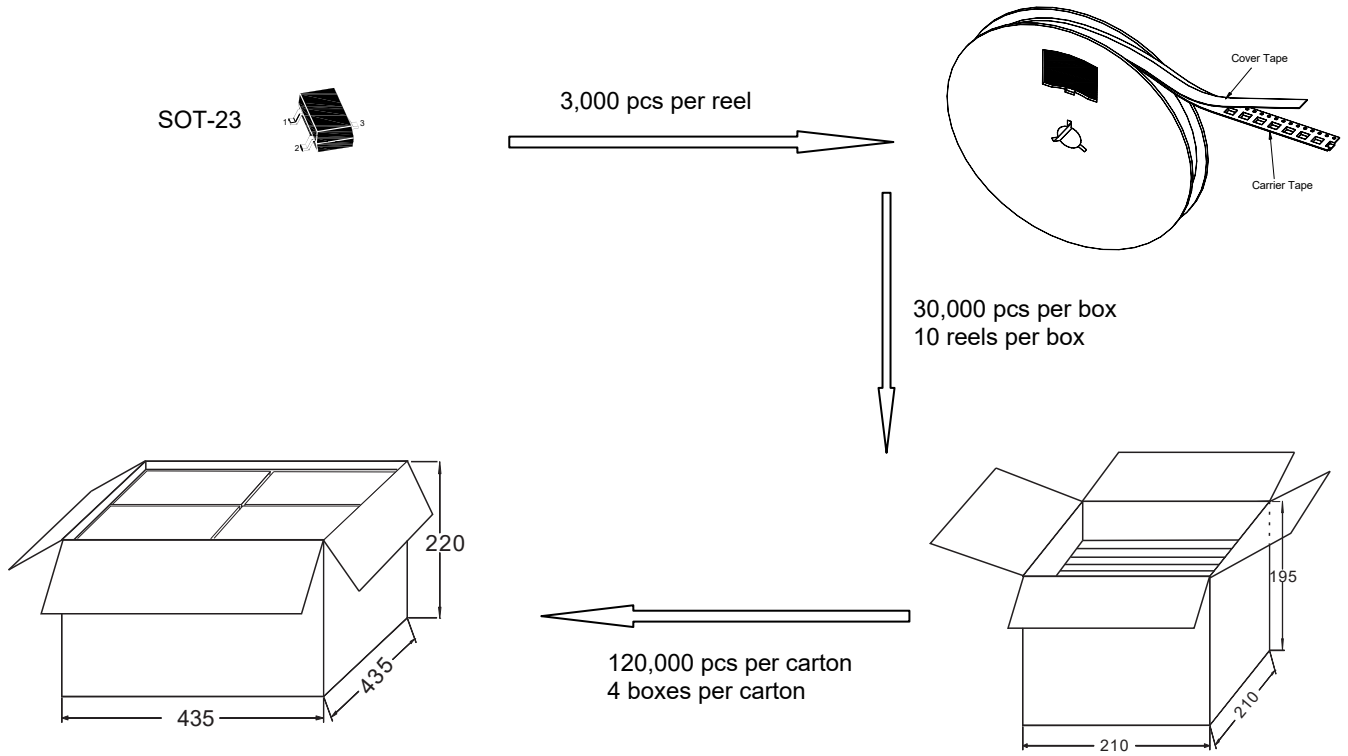
◆ Storage conditions

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

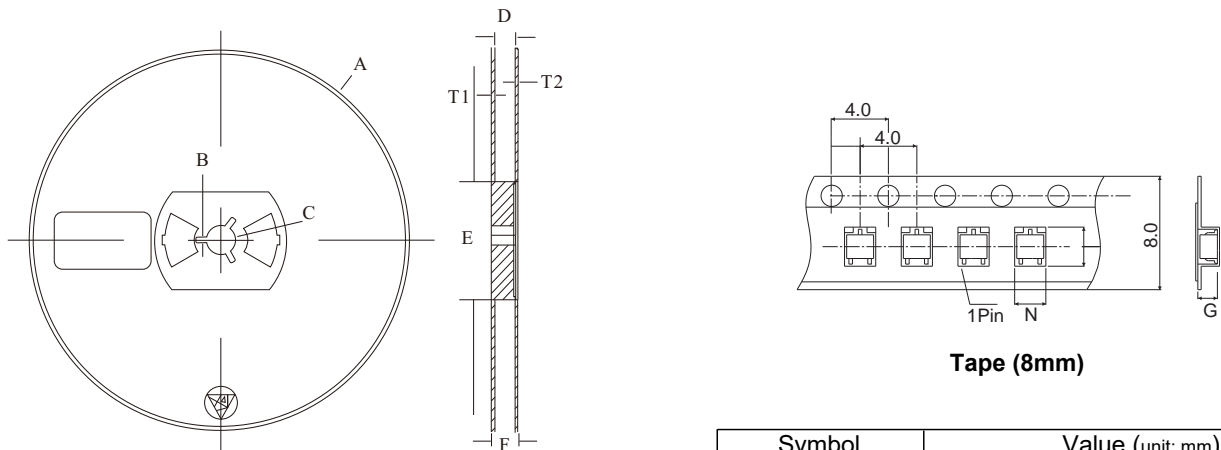


Package Specifications

- 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
N	3.15±0.1
G	1.25±0.1