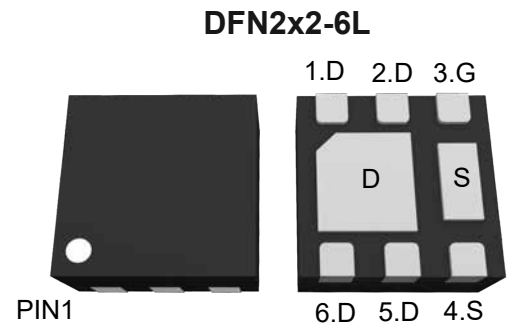


### Features

- Low gate charge and  $R_{DS(ON)}$
- $V_{DS} = -20V, I_D = -9A$   
 $R_{DS(on)} < 26m\Omega @ V_{GS} = -4.5V$

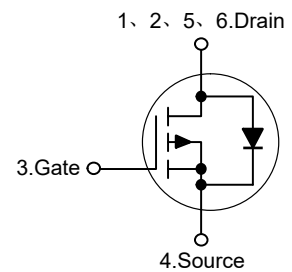


**Marking Code: 09P20**

### Applications

- Load switch and power management
- PWM application

### Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	20	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Drain Current-Continuous	$-I_D$	9	A
Drain Current-Pulsed <sup>Note1</sup>	$-I_{DM}$	30	A
Maximum Power Dissipation	$P_D$	3	W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	41.6	°C/W
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# PJM09P20DF

## P-Channel Enhancement Mode Power MOSFET

### Electrical Characteristics

(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
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	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 12V, V_{DS}=0V$	--	--	$\pm 100$	nA
Gate Threshold Voltage	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	0.4	0.7	1.0	V
Drain-Source On-Resistance <sup>Note2</sup>	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-7A$	--	--	26	m $\Omega$
		$V_{GS}=-2.5V, I_D=-5.6A$	--	--	37	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS}=-5V, I_D=-2A$	--	8	--	S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-10V, V_{GS}=0V, f=1MHz$	--	1200	--	pF
Output Capacitance	$C_{oss}$		--	191	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	168	--	pF
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DS}=-10V, I_D=-5A$ $V_{GEN}=-4.5V, R_G=10\Omega$	--	11	--	nS
Turn-on Rise Time	$t_r$		--	35	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	30	--	nS
Turn-off Fall Time	$t_f$		--	10	--	nS
Total Gate Charge	$Q_g$	$V_{DS}=-10V, I_D=-5A, V_{GS}=-4.5V$	--	33.7	--	nC
Gate-Source Charge	$Q_{gs}$		--	3.5	--	nC
Gate-Drain Charge	$Q_{gd}$		--	10.5	--	nC
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage	$-V_{SD}$	$V_{GS}=0V, I_S=-9A$	--	--	1.2	V
Diode Forward Current	$-I_S$		--	--	9	A

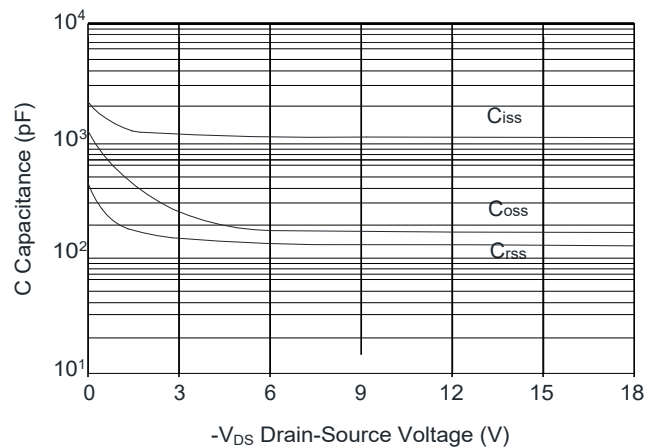
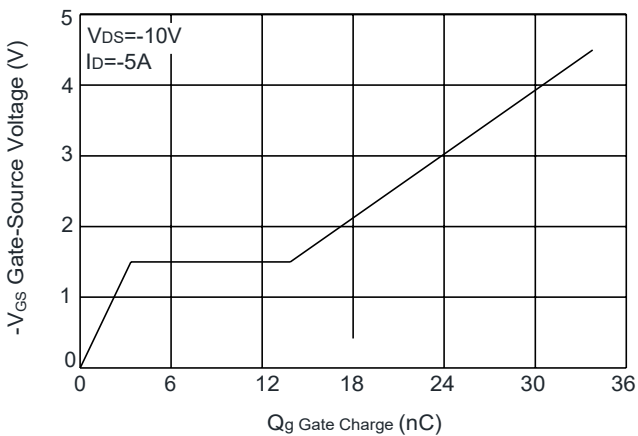
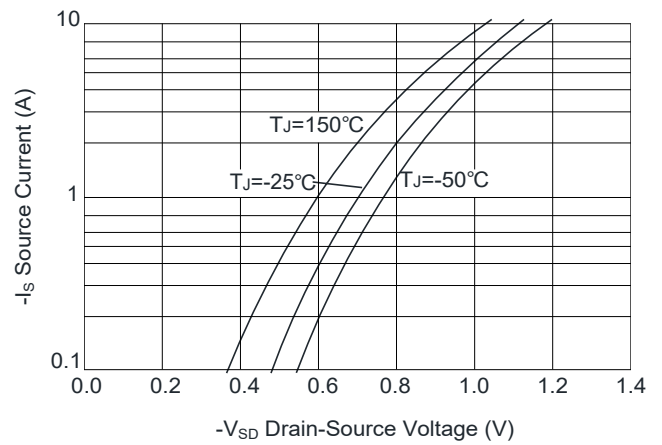
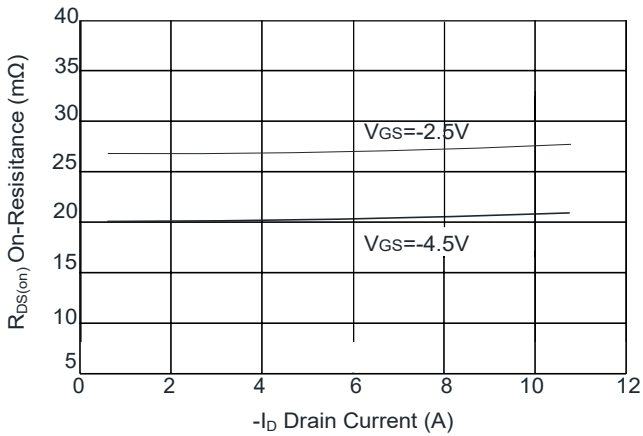
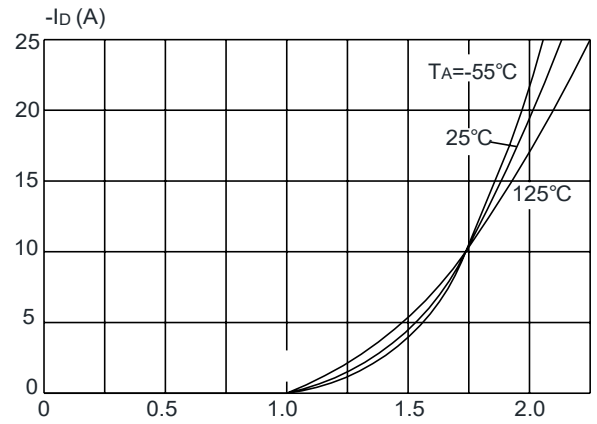
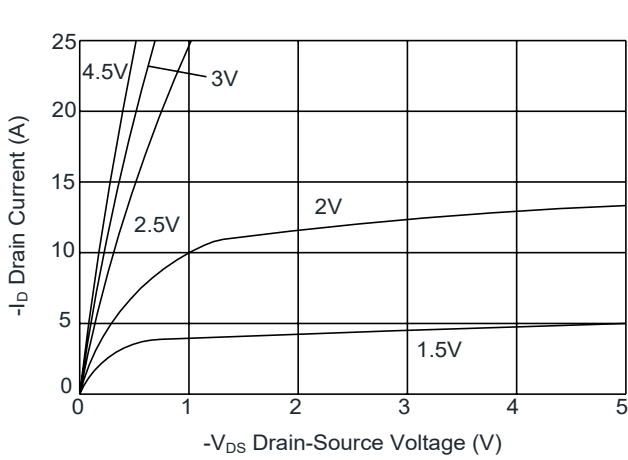
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.  
 2. Pulse Test: Pulse width $\leq 300\mu s$ , duty cycle $\leq 2\%$ .



# PJM09P20DF

## P-Channel Enhancement Mode Power MOSFET

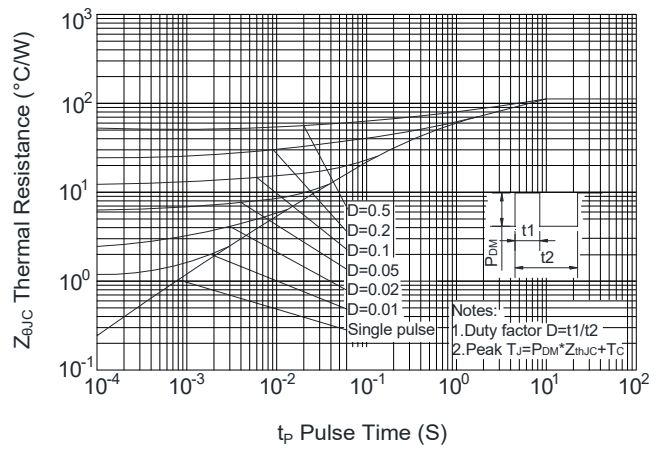
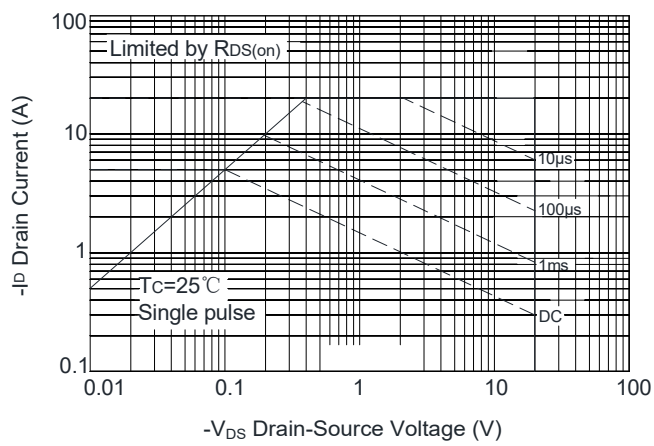
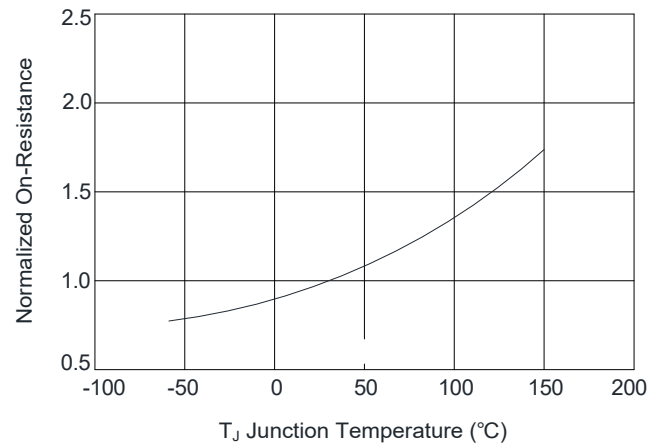
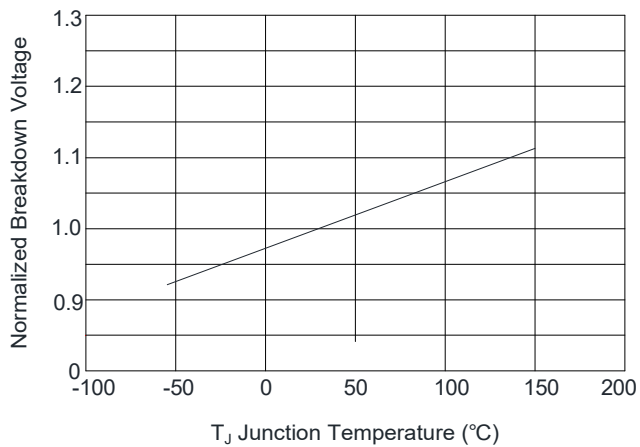
### Typical Characteristic Curves





# PJM09P20DF

## P-Channel Enhancement Mode Power MOSFET





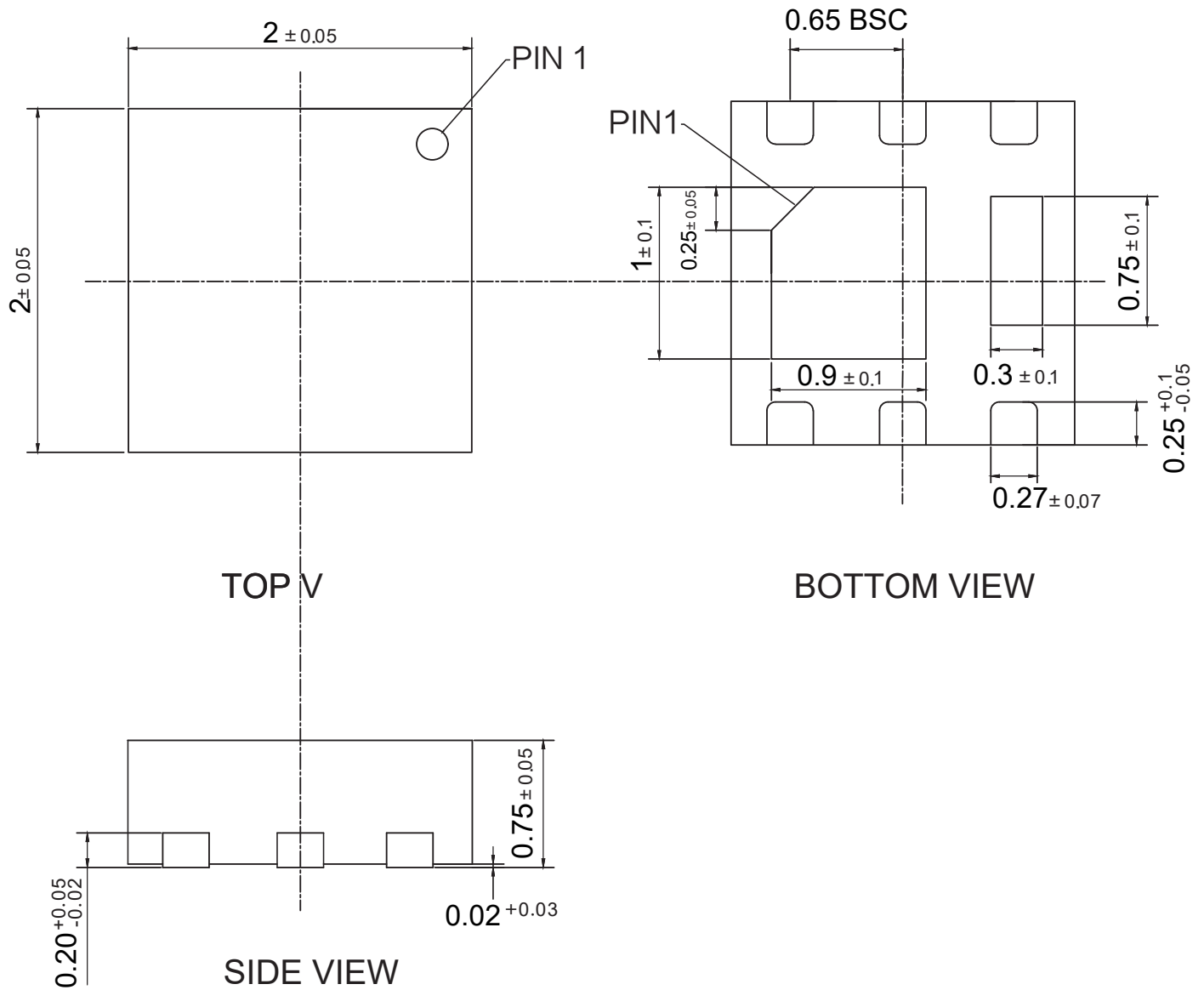
# PJM09P20DF

## P-Channel Enhancement Mode Power MOSFET

### Package Outline

DFN2x2-6L-0001

Dimensions in mm



### Ordering Information

Device	Package	Shipping
PJM09P20DF	DFN2x2-6L	3,000PCS/Reel&7inches