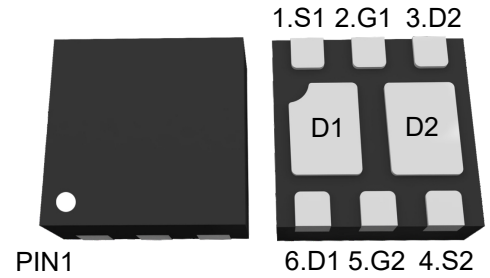


## Dual P-Channel Enhancement Mode Power MOSFET

### Features

- Low gate charge and  $R_{DS(ON)}$
- $V_{DS} = -30V, I_D = -4.1A$   
 $R_{DS(on)} < 60m\Omega @ V_{GS} = -10V$

### DFN2x2A-6L

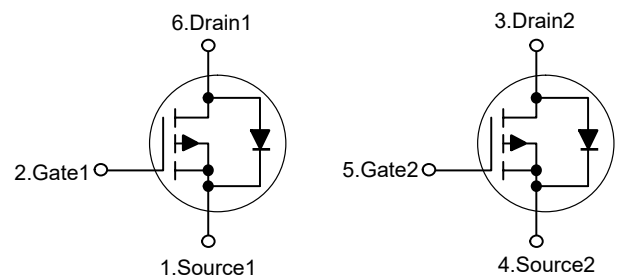


Marking Code: 04DP30

### Applications

- PWM applications
- Load Switch for Portable Devices
- Power management

### Schematic Diagram



### Absolute Maximum Ratings

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$-I_D$	4.1	A
Drain Current-Pulsed <sup>Note1</sup>	$-I_{DM}$	20	A
Maximum Power Dissipation	$P_D$	1.2	W
Junction Temperature	$T_J$	150	°C
Storage Temperature Range	$T_{STG}$	-55 to +150	°C

### Thermal Characteristics

Thermal Resistance, Junction-to-Ambient <sup>Note2</sup>	$R_{\theta JA}$	104	°C/W
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**Electrical Characteristics**

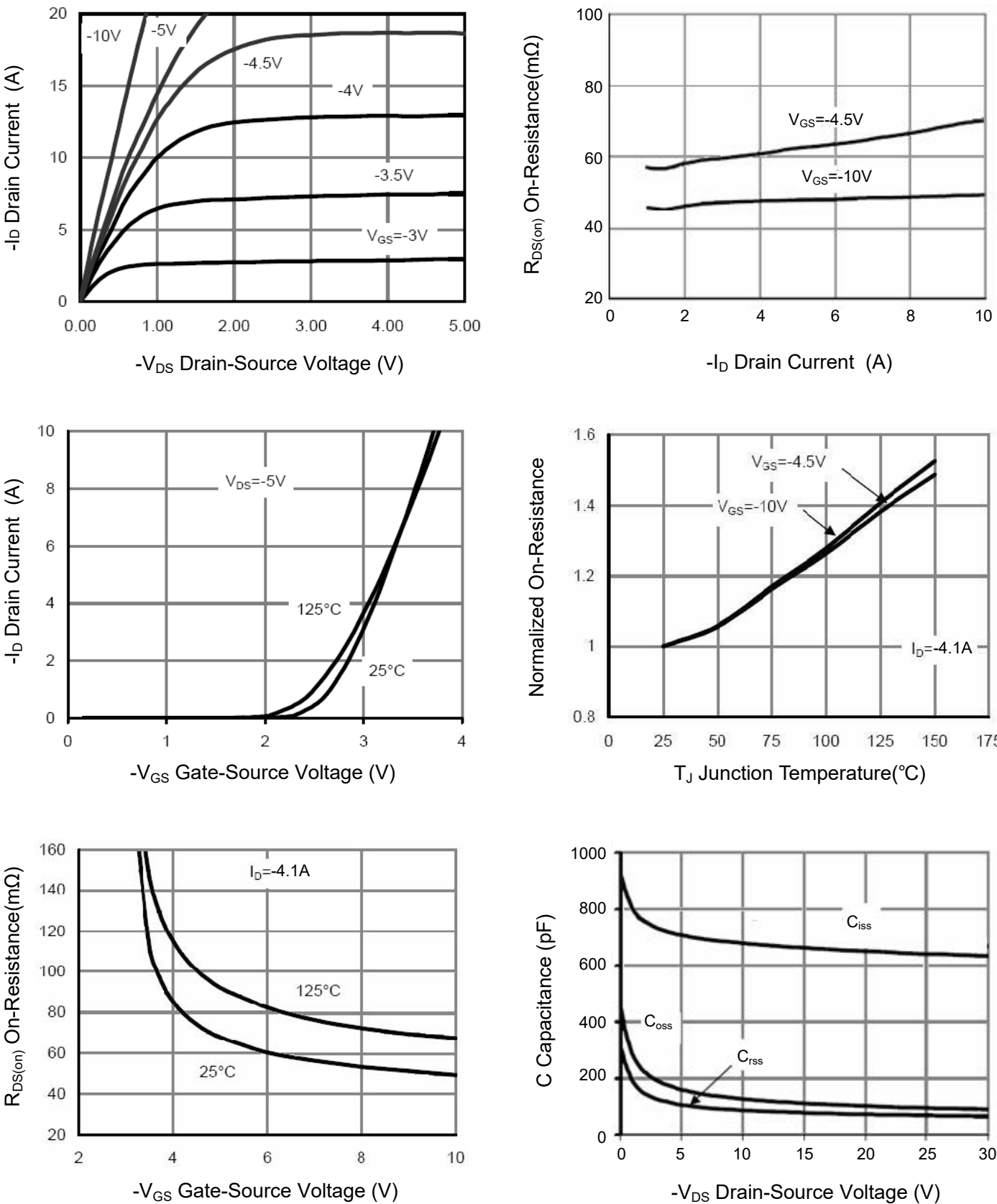
(Ta=25°C unless otherwise specified)

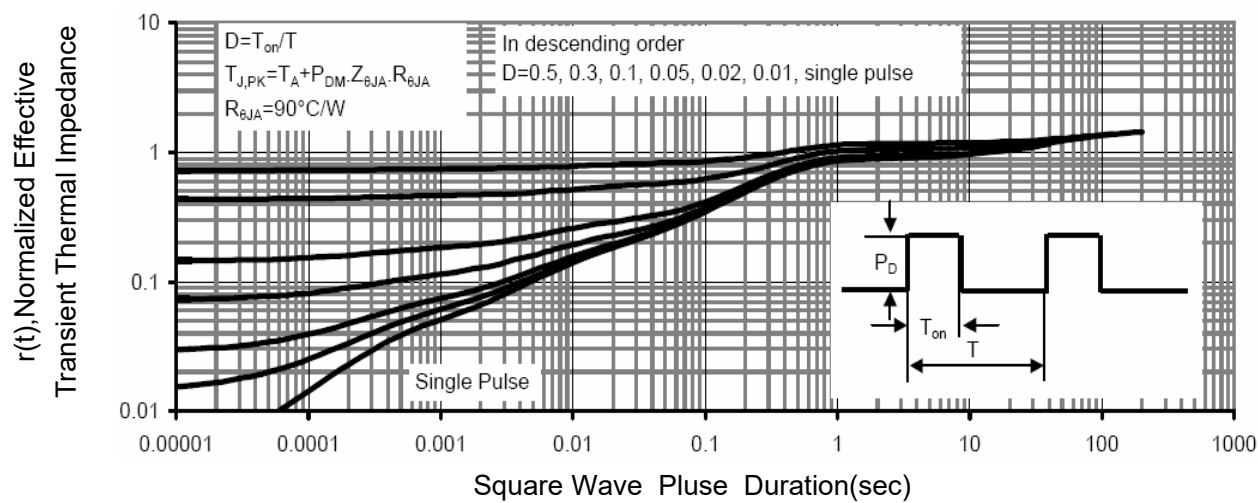
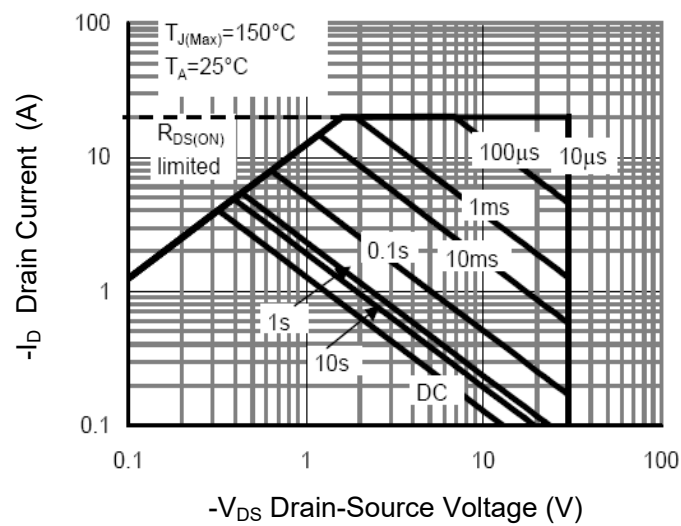
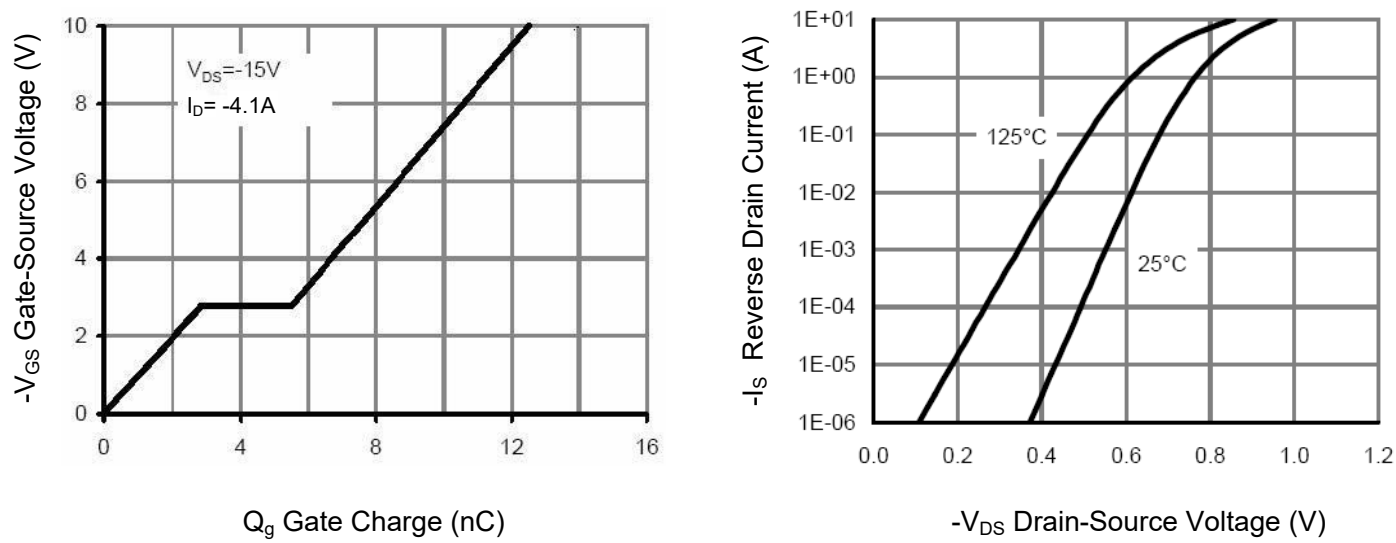
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	30	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	$V_{DS}=-24V, V_{GS}=0V$	--	--	1	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$	--	--	$\pm 100$	nA
Gate Threshold Voltage <sup>Note3</sup>	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	1	1.4	3	V
Drain-source on-resistance <sup>Note3</sup>	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-4.1A$	--	48	60	m $\Omega$
		$V_{GS}=-4.5V, I_D=-3A$	--	60	87	m $\Omega$
Forward Transconductance <sup>Note3</sup>	$g_{FS}$	$V_{DS}=-5V, I_D=-4A$	5.5	--	--	S
Dynamic Characteristics						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$	--	650	--	pF
Output Capacitance	$C_{oss}$		--	105	--	pF
Reverse Transfer Capacitance	$C_{rss}$		--	65	--	pF
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=-15V, R_L=3.6\Omega$ $V_{GS}=-10V, R_{CEN}=3\Omega$	--	8.5	--	nS
Turn-on Rise Time	$t_r$		--	4.5	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	26	--	nS
Turn-off Fall Time	$t_f$		--	12.5	--	nS
Total Gate Charge	$Q_g$	$V_{DS}=-15V$ $I_D=-4.1A, V_{GS}=-10V$	--	12.5	--	nC
Gate-Source Charge	$Q_{gs}$		--	2.8	--	nC
Gate-Drain Charge	$Q_{gd}$		--	2.7	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage <sup>Note3</sup>	$-V_{SD}$	$V_{GS}=0V, I_S=-4.1A$	--	--	1.2	V
Diode Forward Current <sup>Note2</sup>	$-I_S$		--	--	4.1	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board,  $t \leq 10$  sec.3. Pulse Test: Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .

Typical Characteristic Curves

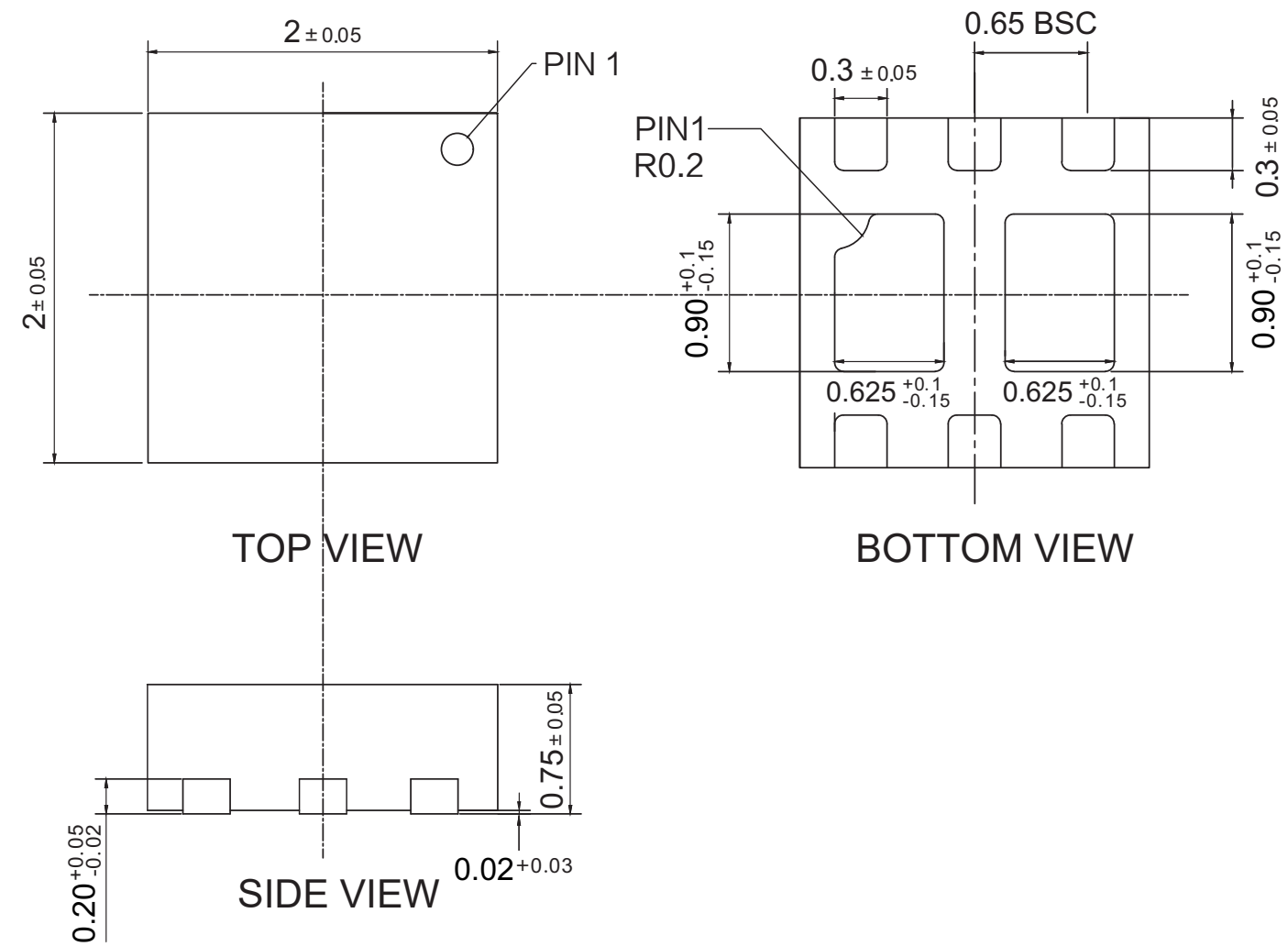




Package Outline

DFN2x2-6L-0002

Dimensions in mm




Ordering Information

Device	Package	Shipping
TN04DP30JDFA	DFN2x2A-6L	3,000PCS/Reel&7inches

## Contact Information

TANI website: <http://www.tanisemi.com> Email: [tani@tanisemi.com](mailto:tani@tanisemi.com)

For additional information, please contact your local Sales Representative.

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