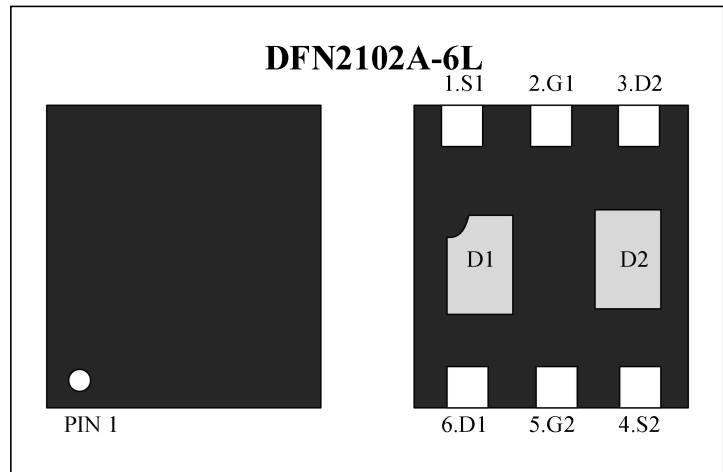


Dual N-Channel Enhancement Mode Power MOSFET

Features

- $V_{DS} = 60V, I_D = 3A$
 $R_{DS(on)} < 105m\Omega @ V_{GS} = 10V$
- Small Surface Mount Package
- Low $R_{DS(on)}$
- RoHS Compliant



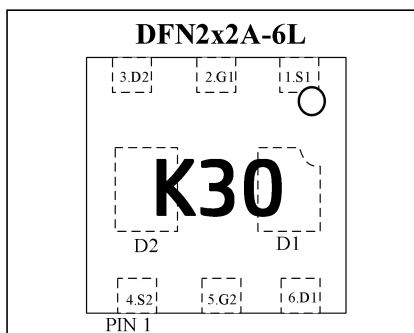
Mechanical Characteristics

- Package: DFN 2102-6L
- Packaging: Tape and Reel per EIA 481
- Marking : Making Code

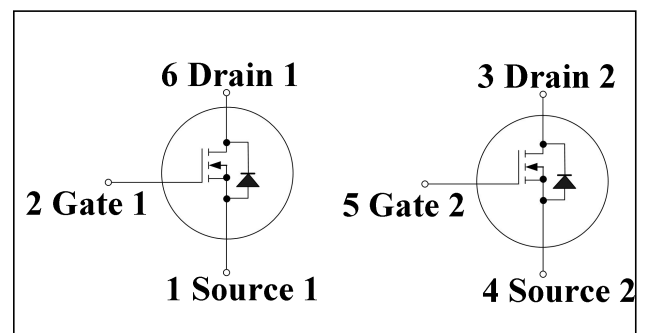
Applications

- Load Switch
- DC/DC Converter

Marking : Making Code



Schematic Diagram



Absolute Maximum Rating (Ratings at 25 °C ambient temperature unless otherwise specified.)

Parameter	Symbols	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous	I_D	3	A
Drain Current-Pulsed ^{Note1}	I_{DM}	10	A
Junction Temperature	P_D	2	W
Maximum Power Dissipation	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient Note2	$R_{\theta JA}$	62.5	$^{\circ}\text{C/W}$
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Electrical Characteristics($T_c=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter	Symbols	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60	--	--	V
Zero Gate Voltage Drain 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	μA
Gate Threshold Voltage ^{Note3}	$-V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1	1.35	2.5	V
Drain-Source On-Resistance ^{Note3}	$R_{DS(ON)}$	$V_{GS}=10V, I_D=3A$	--	78	105	
		$V_{GS}=4.5V, I_D=3A$	--	96	125	m Ω
Forward Transconductance ^{Note3}	g_{FS}	$V_{DS}=5V, I_D=3A$	--	3	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS}=30V, V_{GS}=0V, f=1MHz$	--	510	--	pF
Output Capacitance	C_{oss}		--	34	--	pF
Reverse Transfer Capacitance	C_{rss}		--	26	--	pF
Total Gate Charge	Q_g	$V_{DS}=30V, I_D=3A, V_{GS}=10V$	--	14.6	--	nC
Gate-Source Charge	Q_{gs}		--	1.6	--	nC
Gate-Drain Charge	Q_{gd}		--	3	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=30V, I_D=3A, V_{GS}=10V, R_{GEN}=1\Omega$	--	6	--	nS
Turn-on Rise Time	t_r		--	15	--	nS
Turn-off Delay Time	$t_{d(off)}$		--	15	--	nS
Turn-off Fall Time	t_f		--	10	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	$-V_{SD}$	$V_{GS}=0V, I_S=3A$	--	--	1.2	V
Diode Forward Current ^{Note2}	$-I_S$	--	--	--	3	A

Notes:

- Repetitive Rating: Pulse width limited by maximum junction temperature.
- Surface Mounted on FR4 Board, $t \leq 10$ sec.
- Pulse Test: Pulse width $\leq 300 \mu s$, duty cycle $\leq 0.5\%$.

Typical Characteristics Curves

Figure 1. Output Characteristics

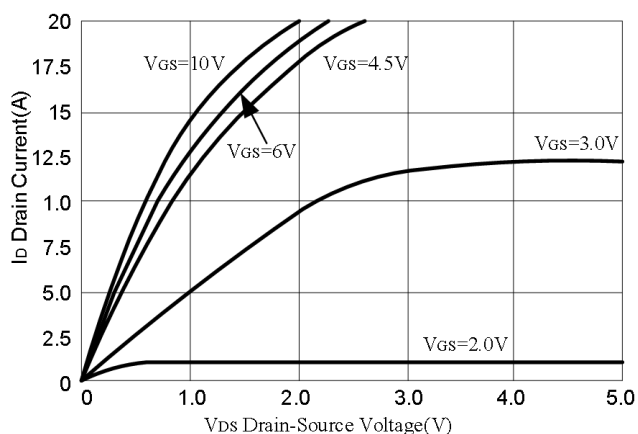
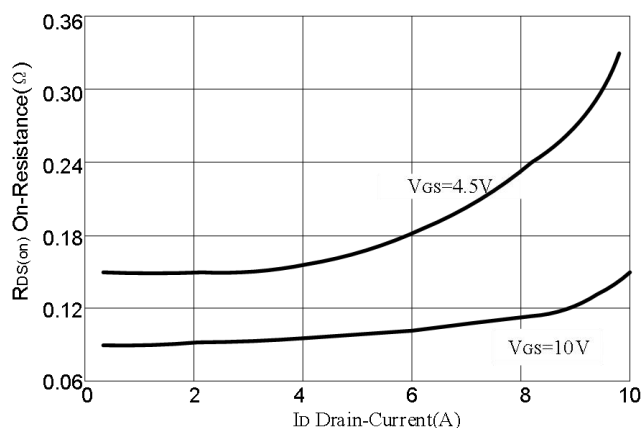
Figure 2. $R_{DS(ON)}$ vs. I_D 

Figure 3. Transfer Characteristics

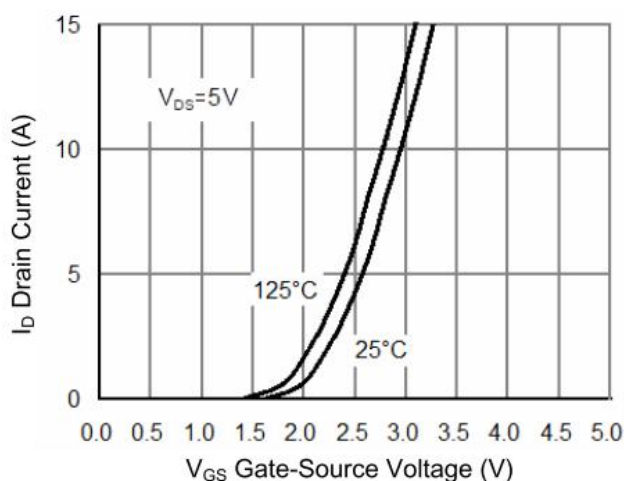
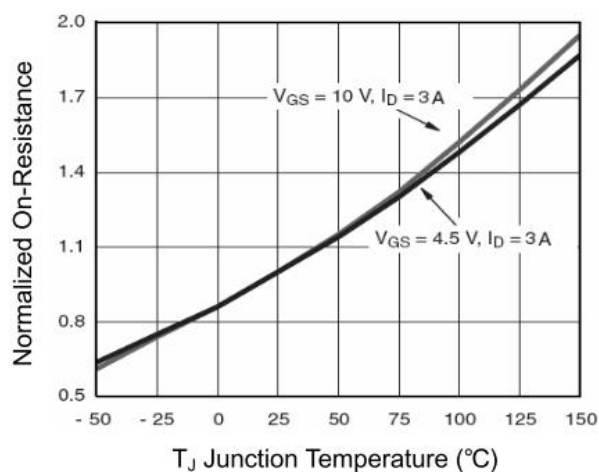
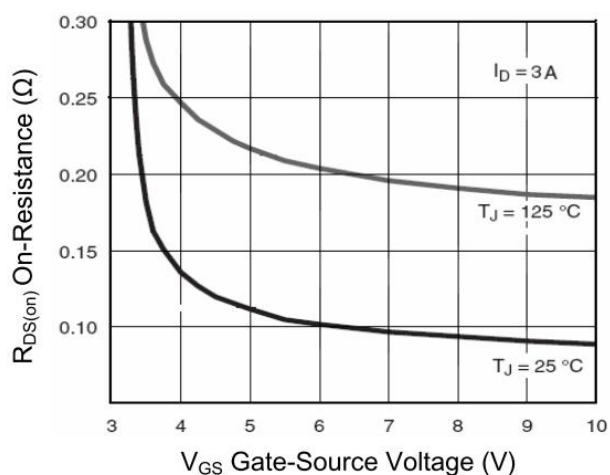
Figure 4. Normalized $R_{DS(on)}$ vs. TemperatureFigure 5. $R_{DS(on)}$ vs. V_{GS} 

Figure 6. Capacitance Characteristics

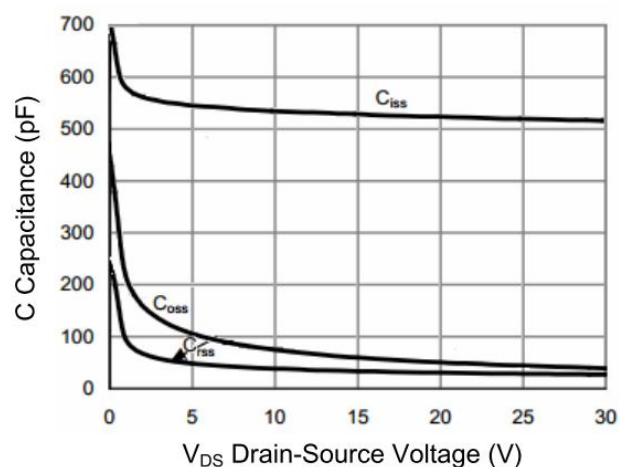


Figure 7. Gate Charge Characteristics

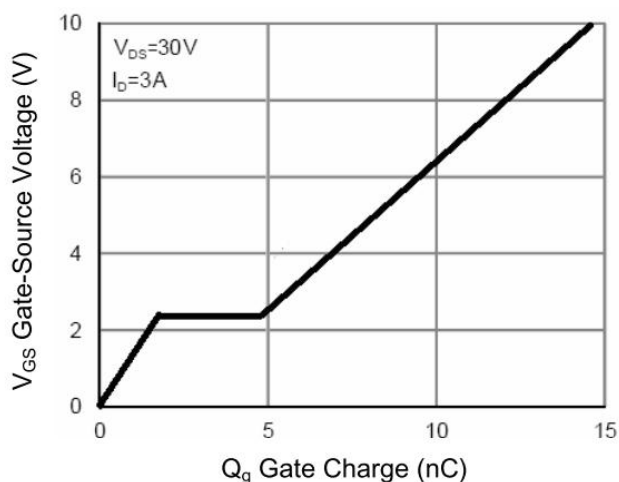


Figure 8. Junction Temperature

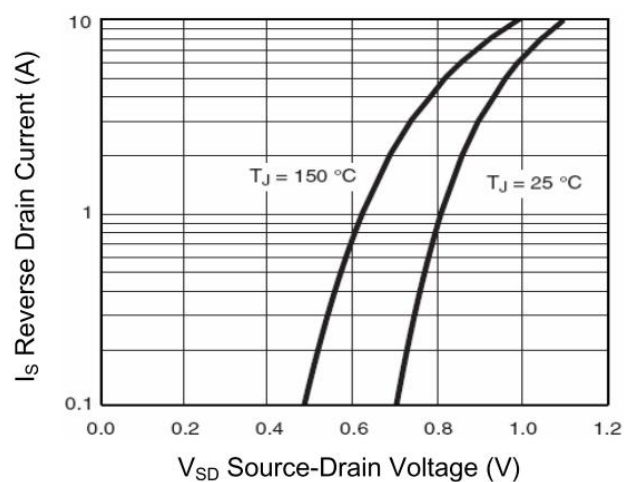


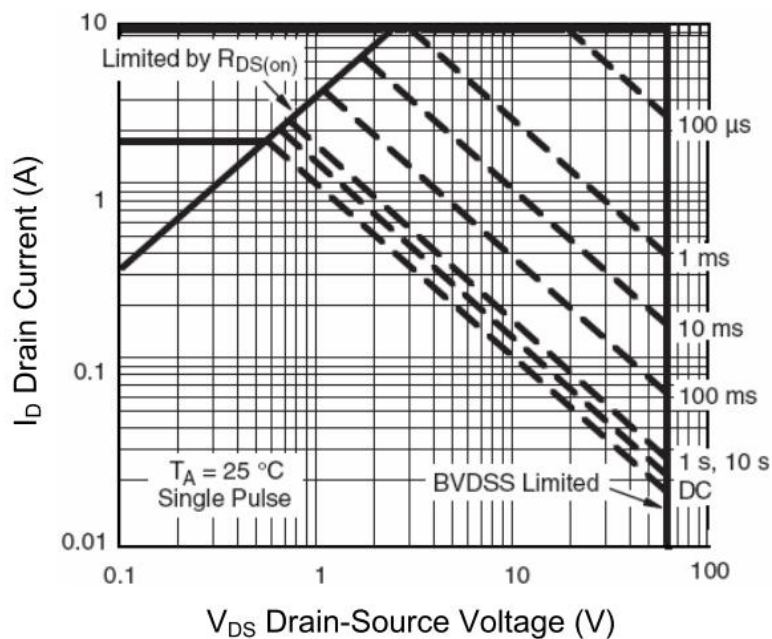
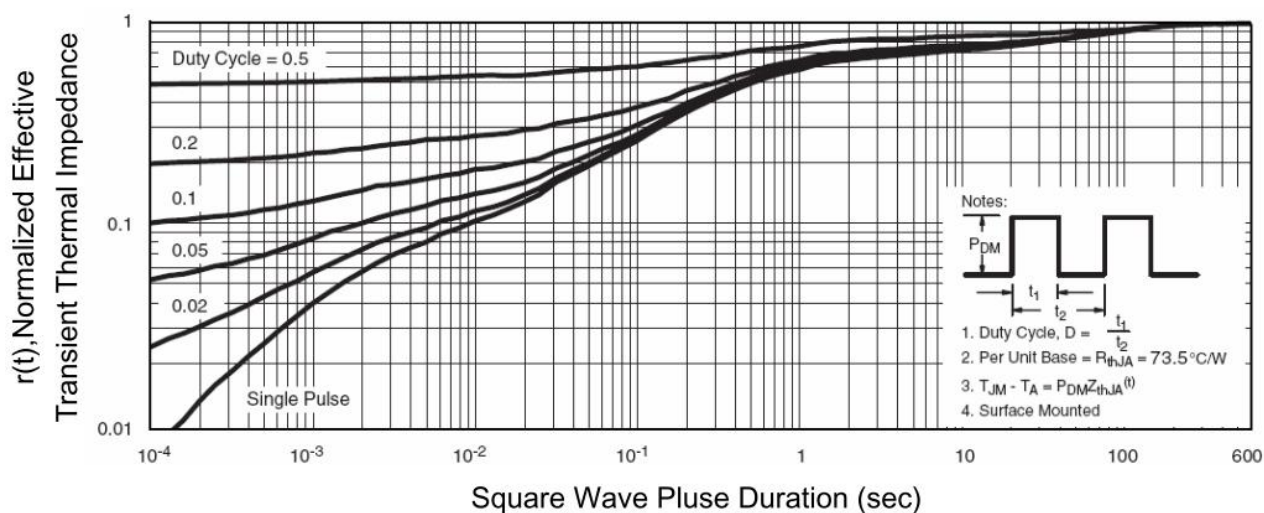
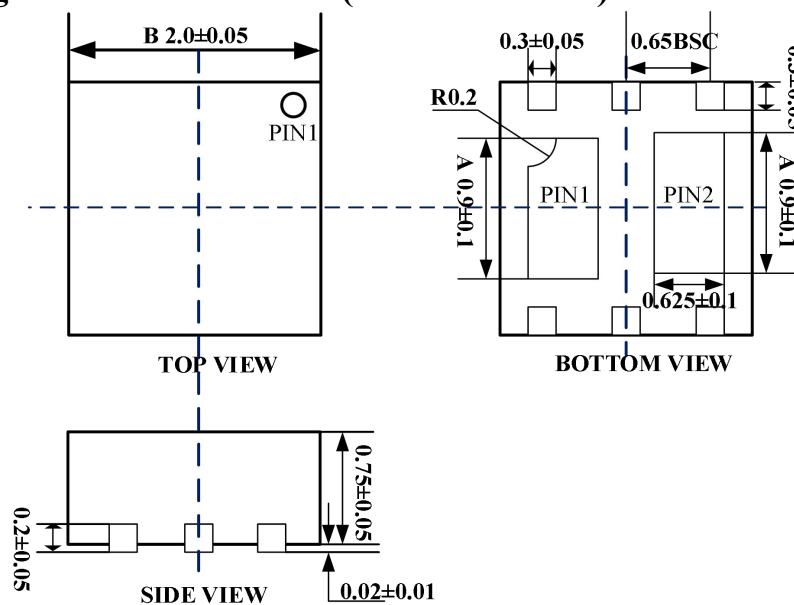
Figure 9. I_D - V_{DS} Characteristics

Figure 10. Square Wave Pluse Duration



Outline Drawing – DFN2102-6L-0002(Dimensions in mm)



Package Information

Package Type	Description	Quantity (pcs)	Standard
DFN2102-6L-0002	Tape & Reel -7" tape	3000	EIA-481

Contact Information

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For additional information, please contact your local Sales Representative.



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