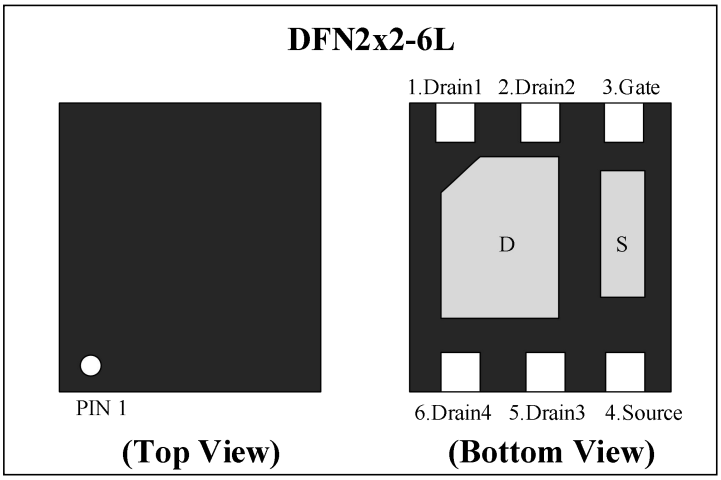
TN18P15DF

P-Channel Enhancement Mode Power MOSFET

Features

- V_{DS}=－15V,I_D= －18A
  R_{DS}(on)<18mΩ @V_{GS}= －4.5V
  R_{DS}(on)<24mΩ @V_{GS}= －2.5V
- Small Surface Mount Package
- Low gate charge Low $R_{DS(ON)}$
- RoHS Compliant



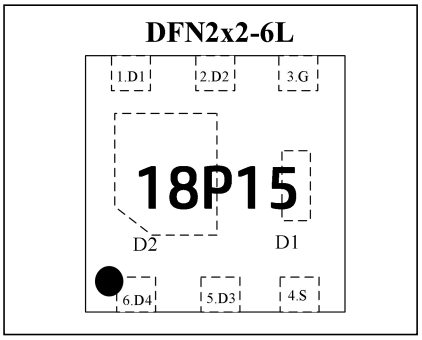
Mechanical Characteristics

- Package:DFN 2x2-6L
- Packaging: Tape and Reel per EIA 481
- Marking : Making Code

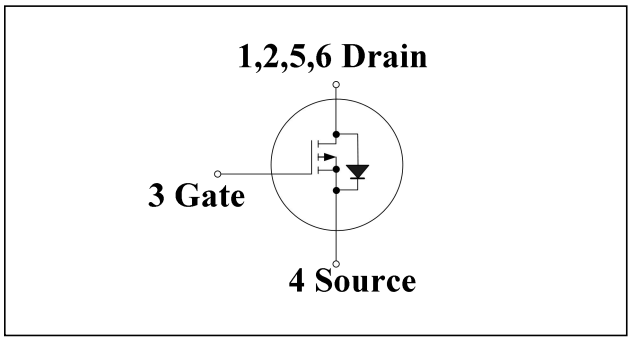
Applications

- Load Switch
- PWM application

Marking : Making Code



Schematic Diagram



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

Parameter	Symbols	Value	Unit
Drain-Source Voltage	$-V_{DS}$	15	V
Gate-Source Voltage	V_{GS}	±12	V
Drain Current-Continuous	$-I_D$	18	A
Drain Current-Pulsed Note1	I_{DM}	64	A
Junction Temperature	P_D	8	W
Single Pulsed Avalanche Energy Note2	E^{AS}	22.5	mJ
Maximum Power Dissipation	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient Note2	$R_{\theta JA}$	15.6	°C/W

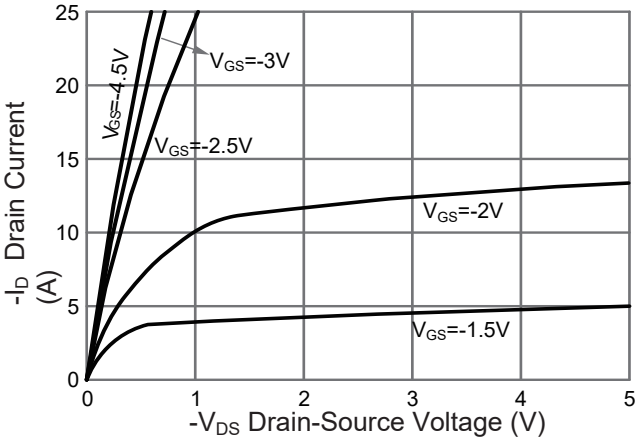
Electrical Characteristics(Tc=25°C Unless otherwise specified)

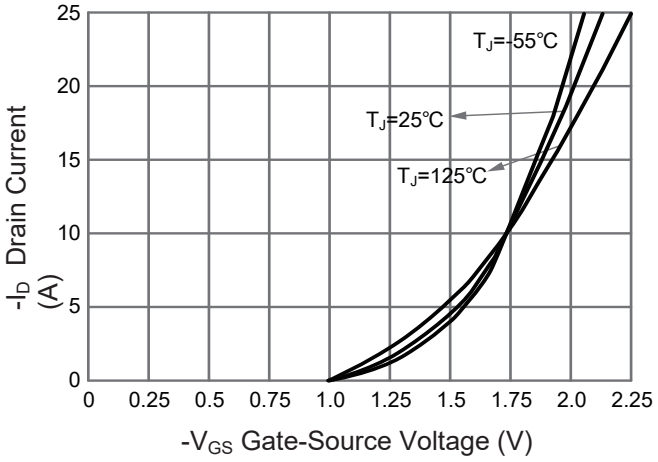
Parameter	Symbols	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	V_{GS}=0V,I_D=−250μA	15	--	--	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	V_{DS}=−15V,V_{GS}=0V	--	--	1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}=±12V,V_{DS}=0V	--	--	±100	μA
Gate Threshold Voltage Note3	$-V_{GS(th)}$	V_{DS}=V_{GS},I_D=−250μA	0.4	0.6	1.0	V
Drain-Source On-Resistance Note3	$R_{DS(ON)}$	V_{GS}=−4.5V,I_D=−8A	--	12	18	mΩ
		V_{GS}=−2.5V,I_D=−5A	--	16.5	24	mΩ
Forward Transconductance Note3	g_{FS}	V_{DS}=−5V,I_D=−1A	--	7.9	--	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=−6V,V_{GS}=0V,f=1MHz	--	1332	--	pF
Output Capacitance	C_{oss}		--	278	--	pF
Reverse Transfer Capacitance	C_{rss}		--	235	--	pF
Gate Resistance	Rg	VDS=-0V,VGS=0V,f=1MHz	--	14	--	Ω
Total Gate Charge	Q_g	V_{DS}=−6V,I_D=−8A, V_{GS}=−4.5V	--	35	--	nC
Gate-Source Charge	Q_{gs}		--	5	--	nC
Gate-Drain Charge	Q_{gd}		--	10	--	nC
Switching Characteristics						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=−6V, I_D=−8A, V_{GS}=−4.5V,R_{GEN}=2.5Ω	--	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
Source-Drain Diode Characteristics						
Diode Forward Voltage Note3	$-V_{SD}$	V_{GS}=0V,I_S=−12A	--	--	1.2	V
Diode Forward Current Note2	$-I_S$	--	--	--	18	A

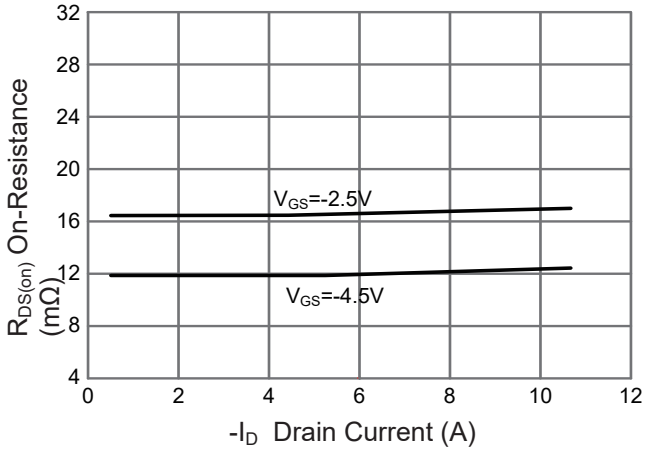
Notes:

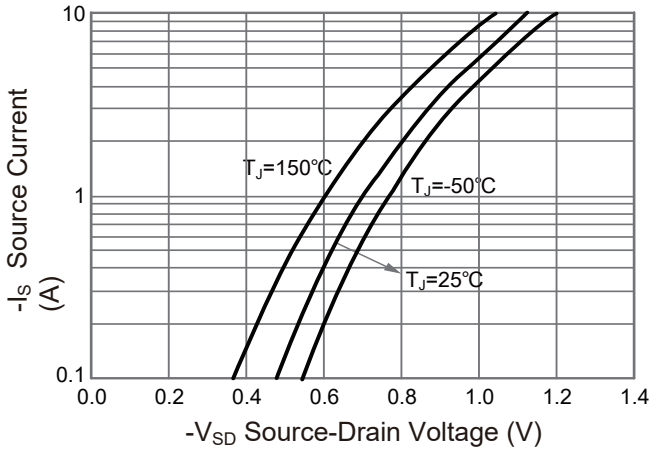
- Repetitive Rating: Pulse width limited by maximum junction temperature.
- The test condition is V_{DD}=10V,V_G=10V,L=0.5mH,I_{AS}=9.5A, T_J=25℃.
- Surface Mounted on FR4 Board, t ≤ 10 sec.
- Pulse Test: Pulse width≤300 μ s, duty cycle≤2%.

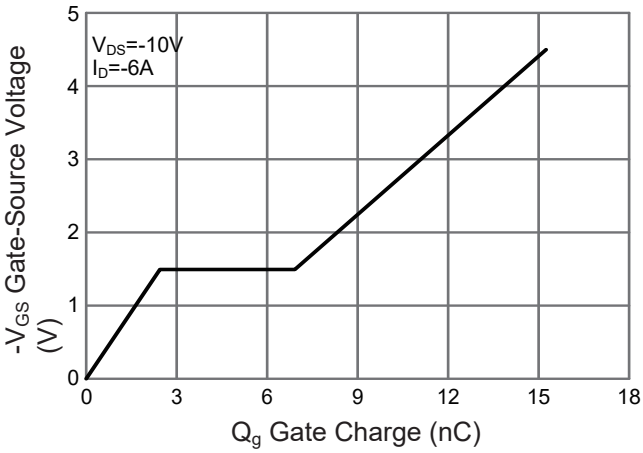
Typical Characteristics Curves

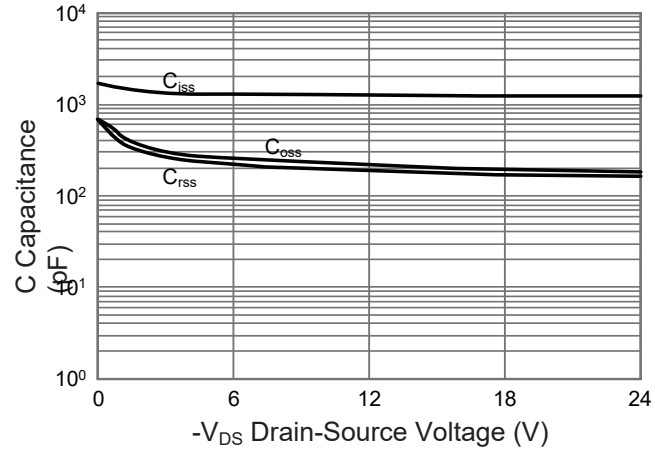


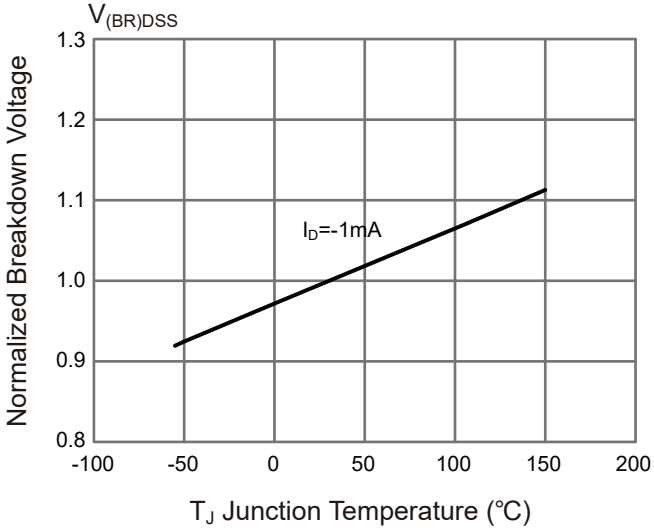


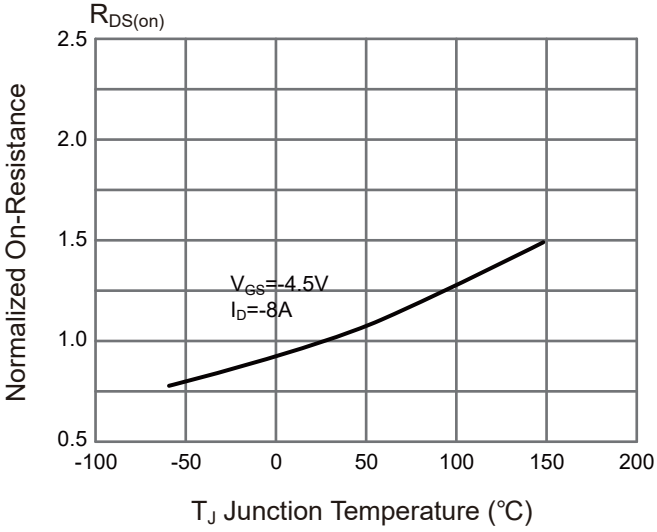




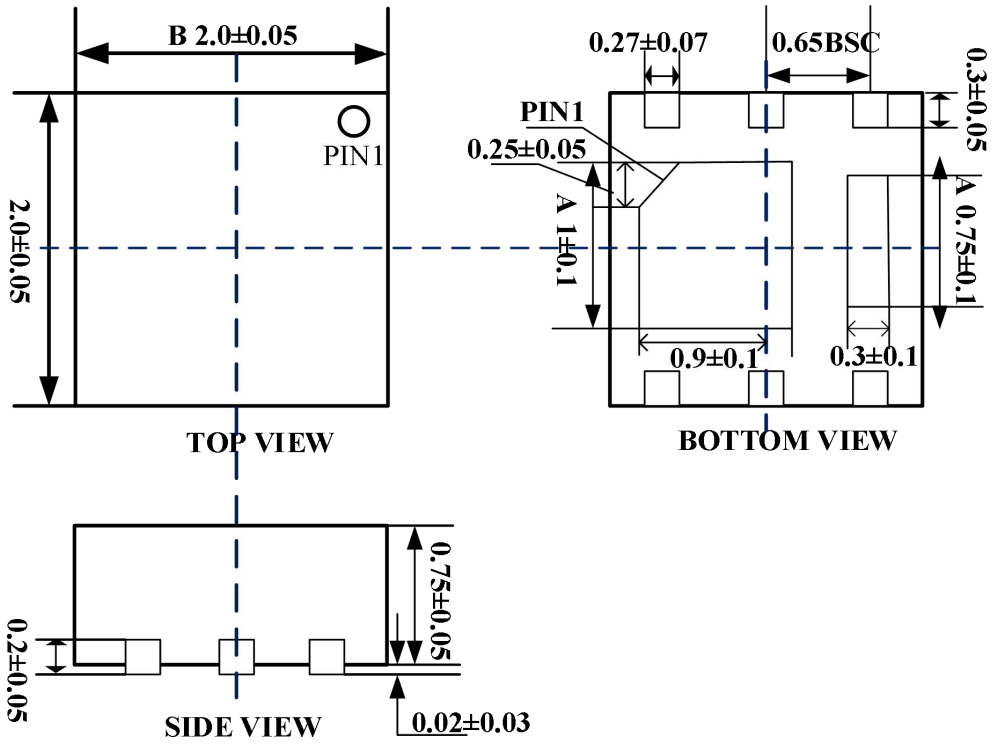








Outline Drawing – DFN2x2-6L(Dimensions in mm)



Package Information

Package Type	Description	Quantity（pcs）	Standard
DFN 2x2-6L	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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