

TN07N20KDF

N-Channel Enhancement Mode Power MOSFET DFN2x2-6L

Product Summary

- $V_{DS} = 20V, I_D = 7A$
- $R_{DS(on)} < 22m\Omega @ V_{GS} = 4.5V$
- $R_{DS(on)} < 26m\Omega @ V_{GS} = 2.5V$

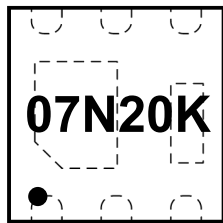
Features

- ESD protected(HBM) up to 2KV
- Halogen and Antimony Free
- Moisture Sensitivity Level 1

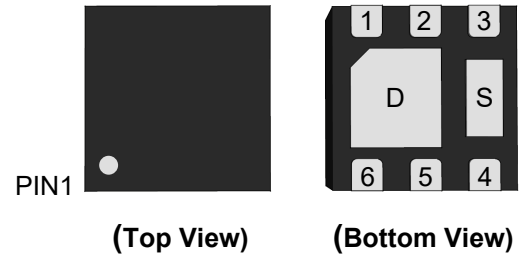
Application

- Power management
- PWM application

Marking Code

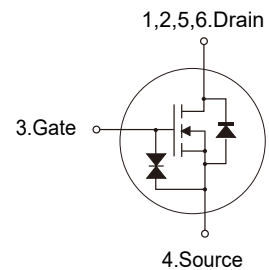


Top View



Pin	Description
1,2,5,6	Drain
3	Gate
4	Source

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}	± 10	V
Drain Current-Continuous	I_D	7	A
Drain Current-Pulsed ^{Note1}	I_{DM}	25	A
Maximum Power Dissipation	P_D	1.7	W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance,Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	73.5	°C/W
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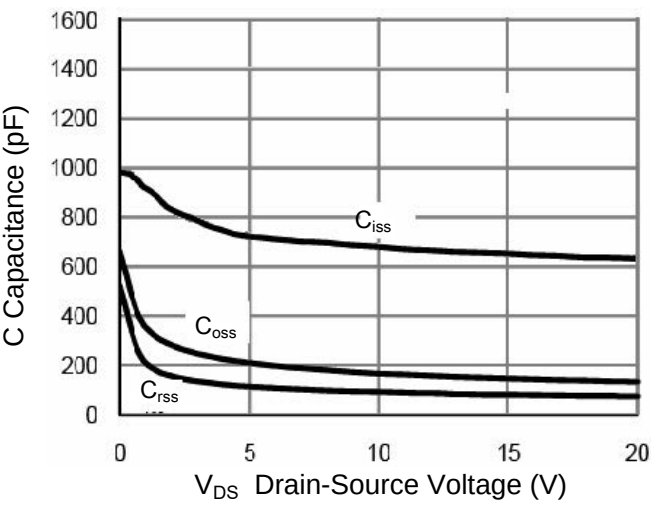
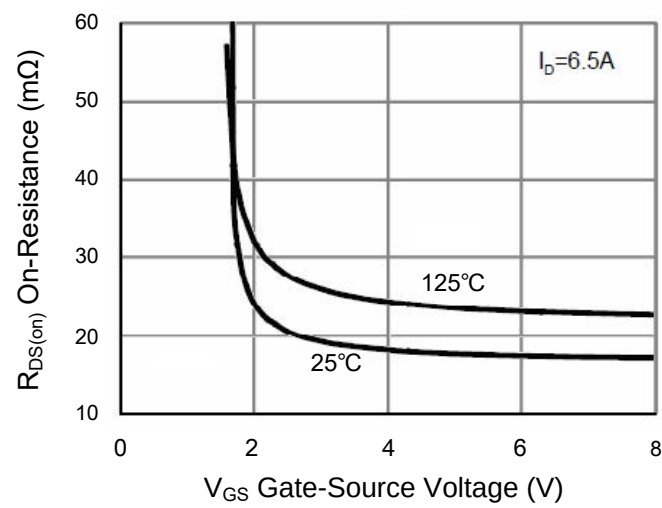
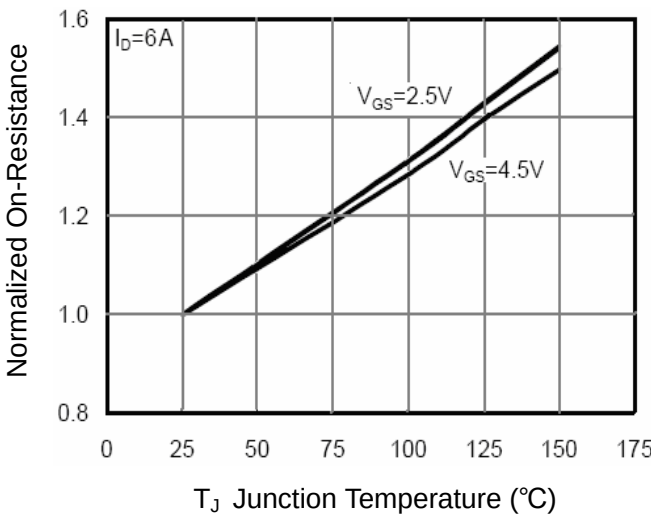
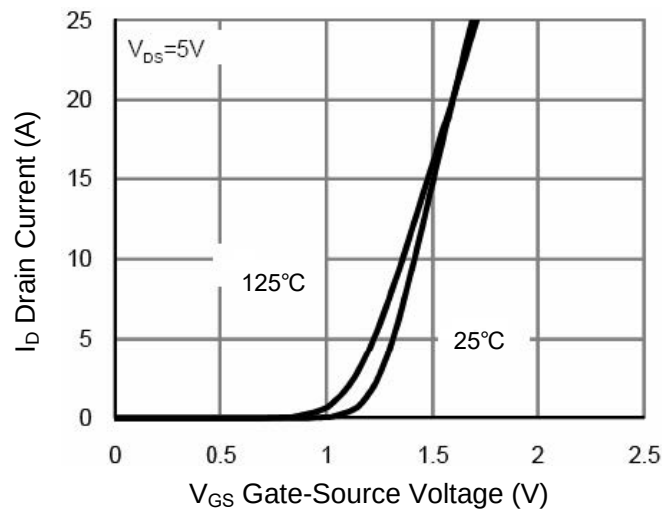
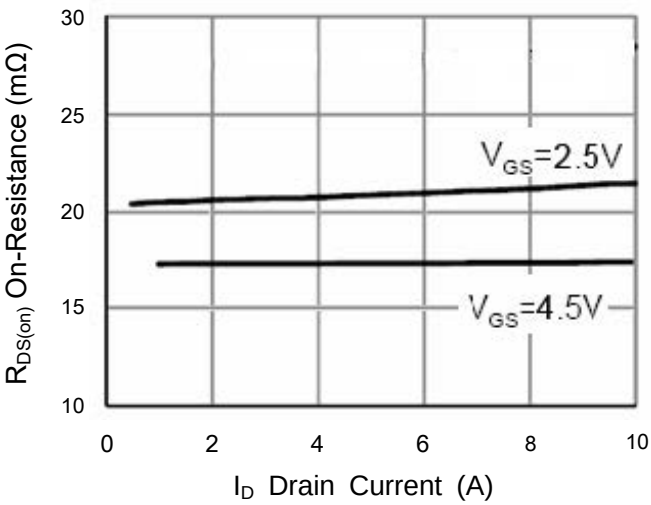
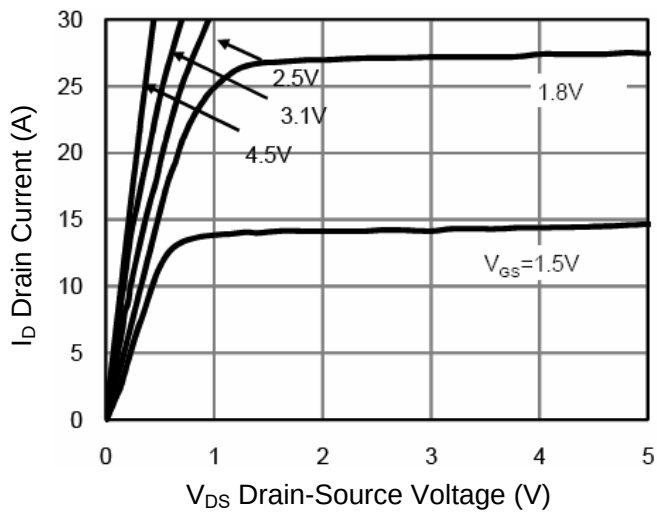
Electrical Characteristics

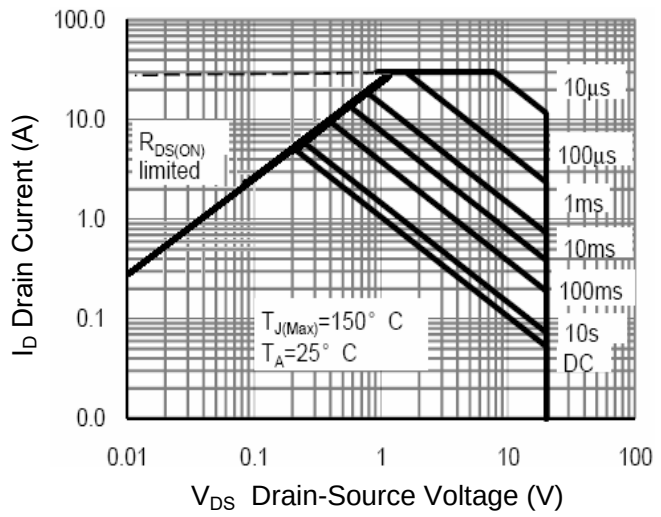
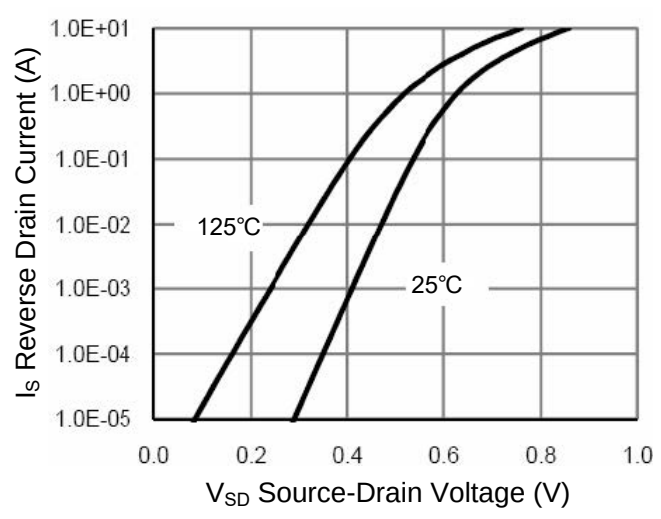
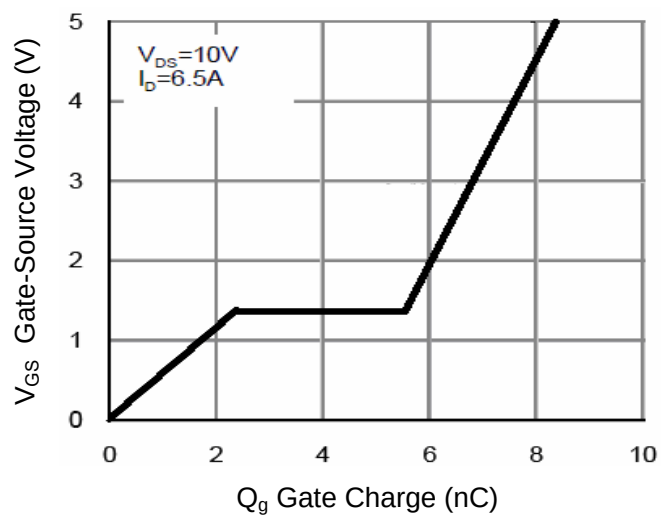
(Ta=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	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} =±8V, V _{DS} =0V	--	--	±10	μA
Gate Threshold Voltage ^{Note3}	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.45	0.7	1	V
Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	V _{GS} =4.5V, I _D =7A	--	--	22	mΩ
		V _{GS} =2.5V, I _D =6A	--	--	26	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V, I _D =2A	8	--	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	660	--	pF
Output Capacitance	C _{oss}		--	160	--	pF
Reverse Transfer Capacitance	C _{rss}		--	87	--	pF
Total Gate Charge	Q _g	V _{DD} =10V, I _D =6.5A, V _{GS} =4.5V	--	8	--	nC
Gate-Source Charge	Q _{gs}		--	2.5	--	nC
Gate-Drain Charge	Q _{gd}		--	3	--	nC
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V, R _L =1.5Ω, V _{GS} =5V, R _{GEN} =3Ω	--	0.5	--	nS
Turn-on Rise Time	t _r		--	1	--	nS
Turn-off Delay Time	t _{d(off)}		--	12	--	nS
Turn-off Fall Time	t _f		--	4	--	nS
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V _{SD}	V _{GS} =0V, I _S =7A	--	--	1.2	V
Diode Forward Current ^{Note2}	I _S		--	--	7	A

Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t ≤ 10 sec.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.

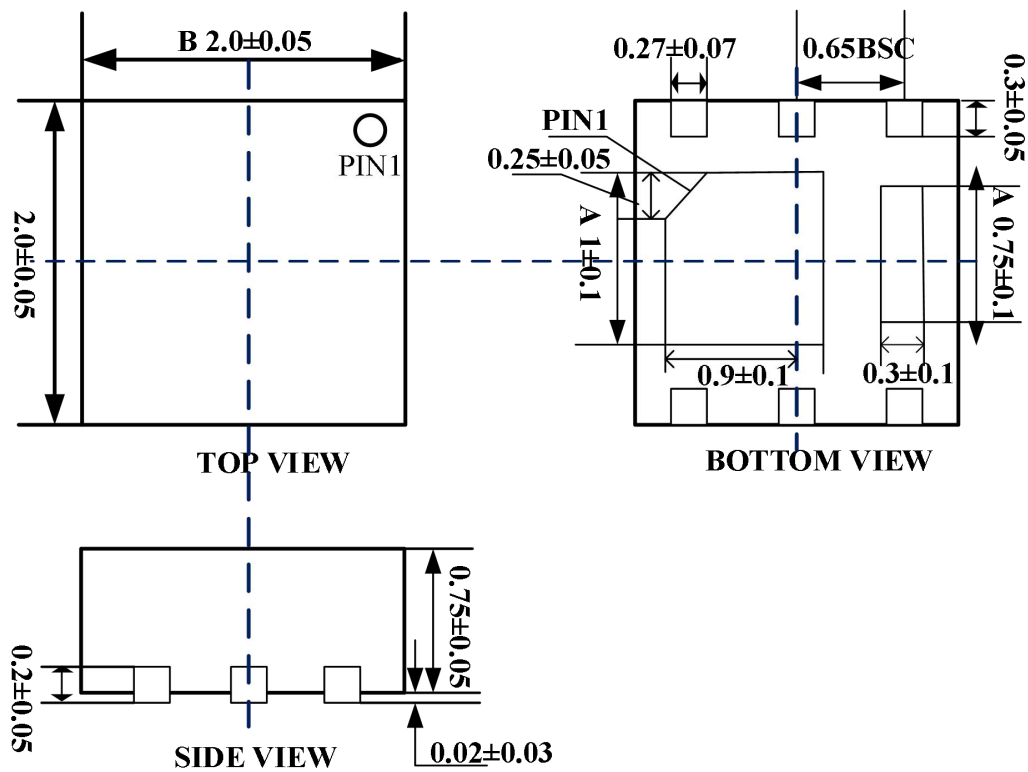
Typical Characteristic Curves





Package Outline

DFN2x2-6L-0001 Dimensions in mm



Ordering Information

Device	Package	Shipping
TN07N20KDF	DFN2x2-6L	3,000PCS/Reel&7inches

Contact Information

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For additional information, please contact your local Sales Representative.

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