

DFN2020-6 30V 7.5mΩ 19A N-Channel MOSFET

MOSFET Product Summary

V_{DS}	$R_{DS(ON)}$ (Typ.)	I_D
30V	4.9mΩ @ $V_{GS}=10V$	19A
	7.5mΩ @ $V_{GS}=4.5V$	

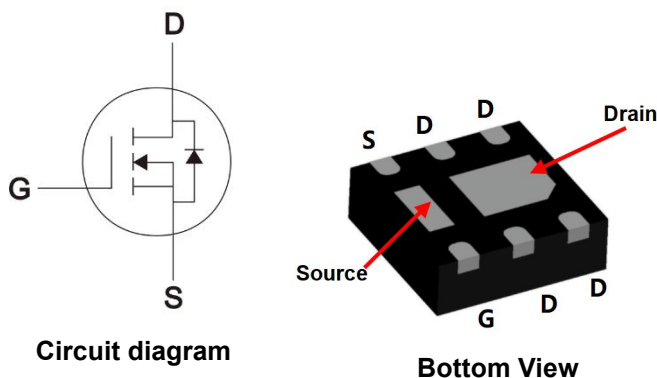
Description

The PM03N19D226 uses advanced Trench technology and designs to provide excellent $R_{DS(ON)}$ with low gate charge. It can be used in a wide variety of applications. The package form is DFN2020-6, with the RoHS standard and Halogen Free standard.

Features

- Low Gate Charge and $R_{DS(ON)}$
- Lead free product is acquired
- High Power and current handing capability

Dimensions and Pin Configuration



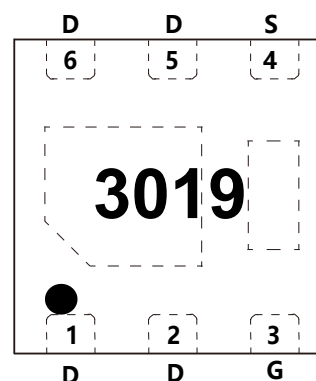
Mechanical Characteristics

- Package: DFN2020-6
- Case Material: “Green” Molding Compound
- Marking Information: See Below

Applications

- DC-DC converter
- Load Switch
- Power Management
- Apply for high-frequency switching and synchronous rectification

Marking Information



3019 = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PM03N19D226	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^(Note1)	I_D	19	A

Pulsed Drain Current ^(Note2)	I_{DM}	95	A
Power Dissipation	P_D	2.2	W
Thermal Resistance from Junction to Ambient ^(Note3)	$R_{\theta JA}$	58	°C/W
Junction Temperature	T_J	-55~ +150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

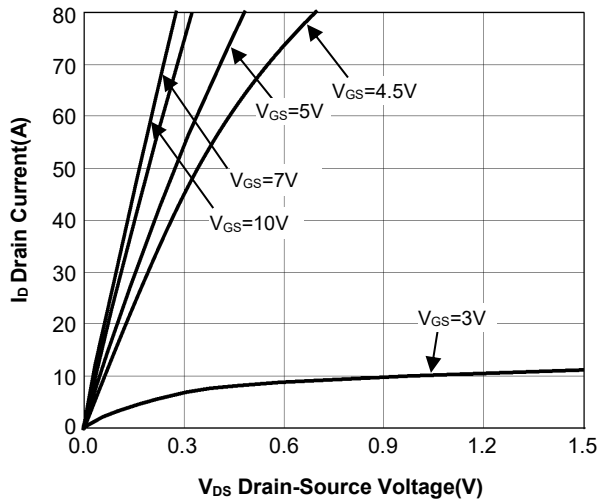
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-to-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30	-	-	V
Zero Gate voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	1	μA
Gate-to-Source Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} =V _{GS} , I _D =250μA	1.0	1.6	2.0	V
Drain-to-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =10A	-	4.9	6.0	mΩ
		V _{GS} =4.5V, I _D =10A	-	7.5	9.0	
Diode Forward Voltage	V _{SD}	I _S =10A,V _{GS} =0V	-	0.83	1.25	V
Dynamic Characteristics						
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz	-	1110	-	pF
Output Capacitance	C _{oss}		-	167	-	
Reverse Transfer Capacitance	C _{rss}		-	103	-	
Switching Characteristics						
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, I _D =10A, R _{GEN} =6Ω	-	6.8	-	nS
Turn-On Rise Time	t _r		-	42	-	
Turn-Off Delay Time	t _{d(off)}		-	31.2	-	
Turn-Off Fall Time	t _f		-	25	-	
Gate Total Charge	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =10A	-	22	-	nC
Gate-Source Charge	Q _{gs}		-	3.8	-	
Gate-Drain Charge	Q _{gd}		-	4.1	-	

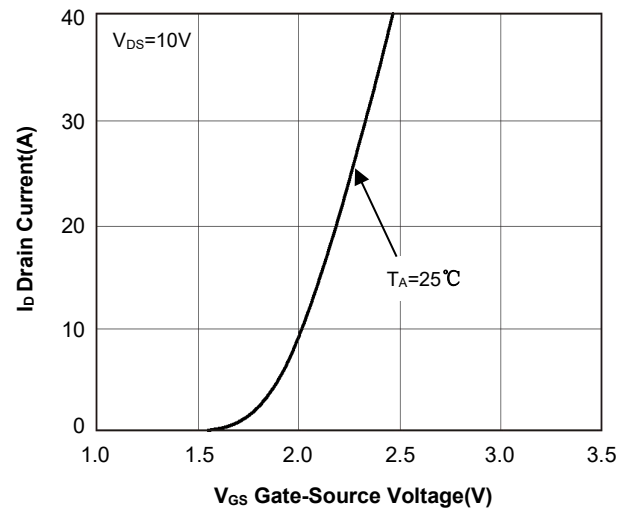
Notes:

1. This current is chip limited, which is calculated based on $R_{\theta JA}$.
2. This current is calculated on single pulse with 10 μ s Pulse & Duty Cycle = 1%.
3. The value of $R_{\theta JA}$, which is steady state, is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, with $T_A=25^\circ\text{C}$.

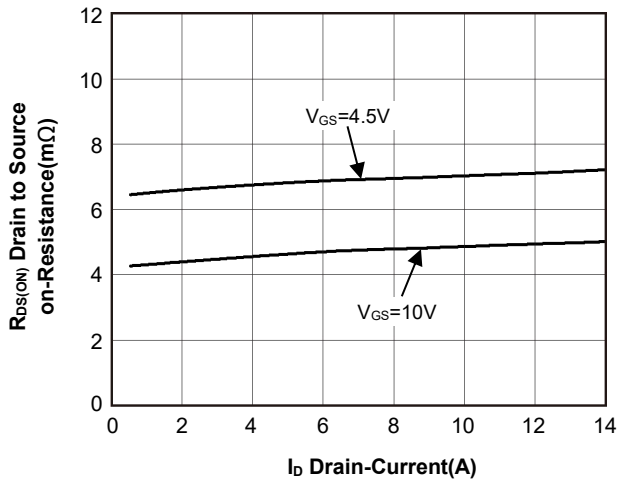
Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)



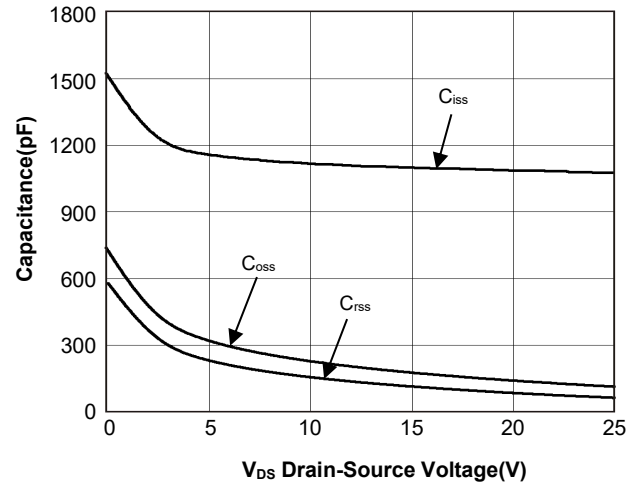
Drain Current vs. Drain-Source Voltage



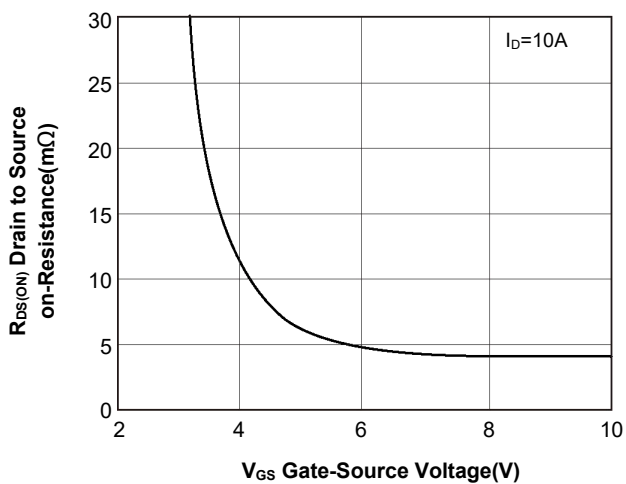
Drain Current vs. Gate-Source Voltage



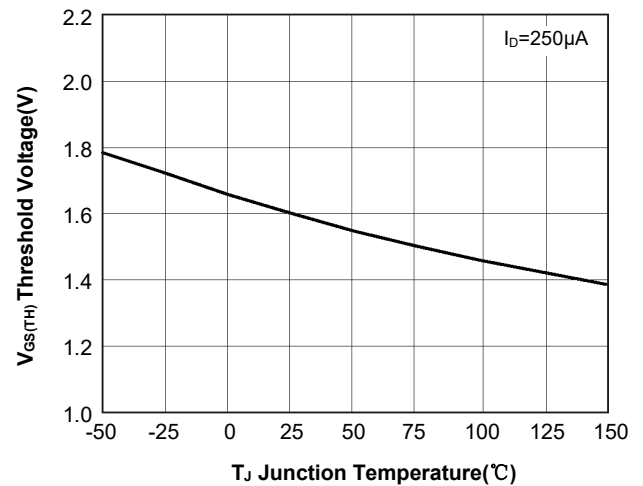
$R_{DS(ON)}$ On-Resistance vs. Drain-Current



Capacitance vs. Drain-Source Voltage

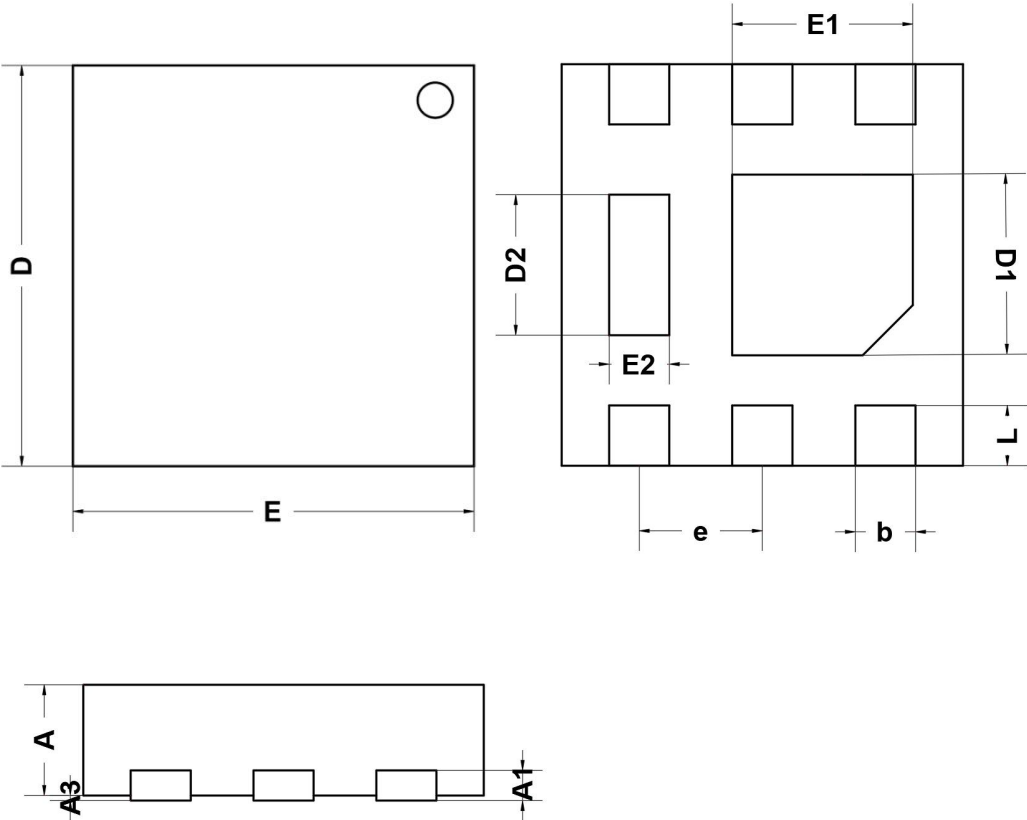


On-Resistance vs. Gate-Source Voltage



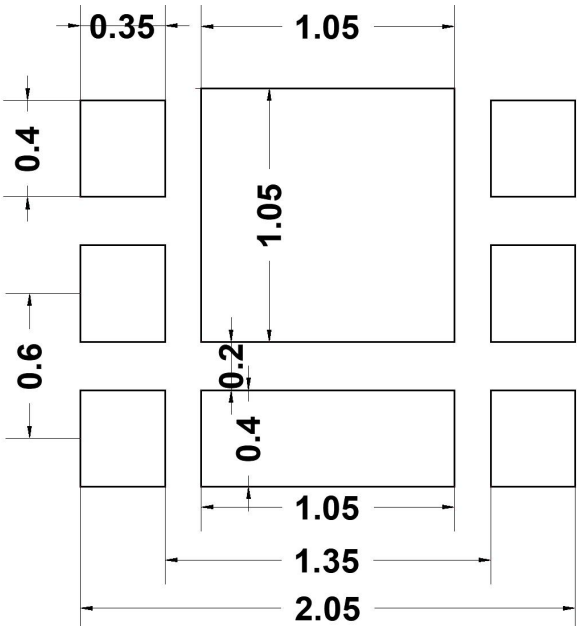
Threshold Voltage vs. Temperature

DFN2020-6 Package Outline Drawing



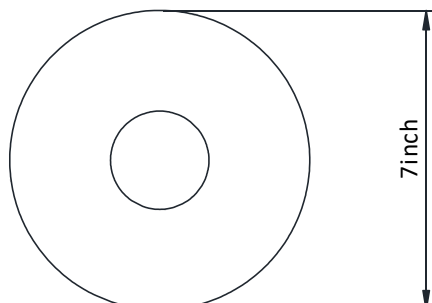
Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.5	0.55	0.6
A1	0.15REF		
A3	0.00	0.025	0.05
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D1	0.875	0.90	0.925
E1	0.875	0.90	0.925
D2	0.675	0.70	0.725
E2	0.275	0.30	0.325
L	0.25	0.30	0.35
b	0.3REF		
e	0.65BSC		

Suggested Land Pattern (Unit:mm)

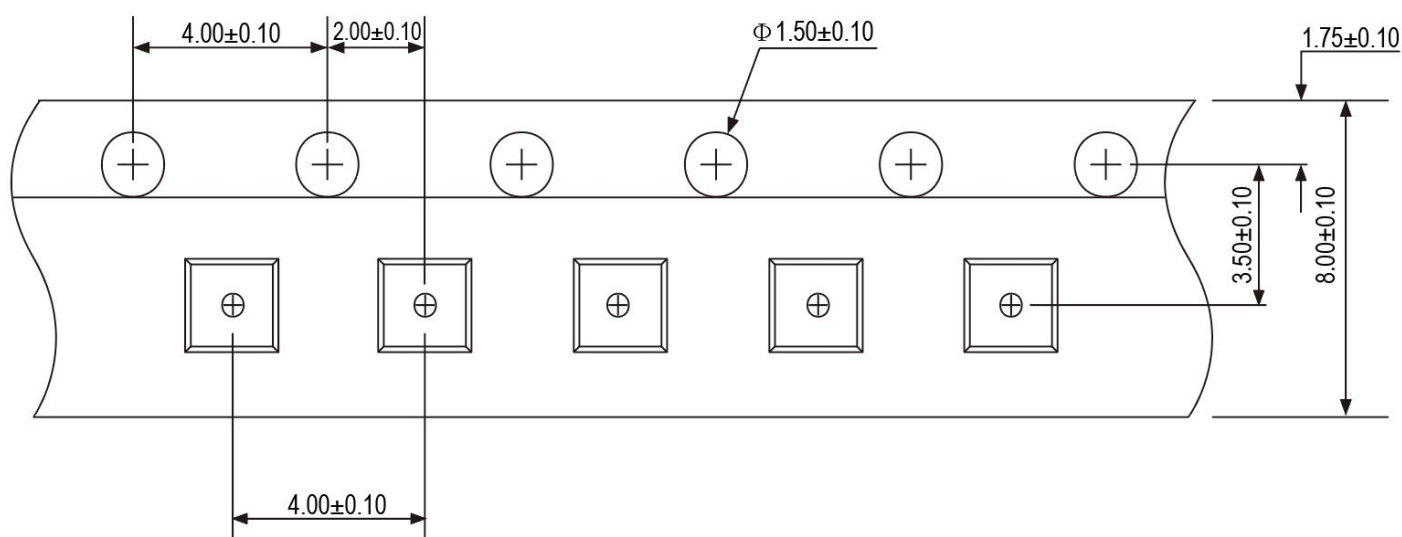


TAPE AND REEL INFORMATION

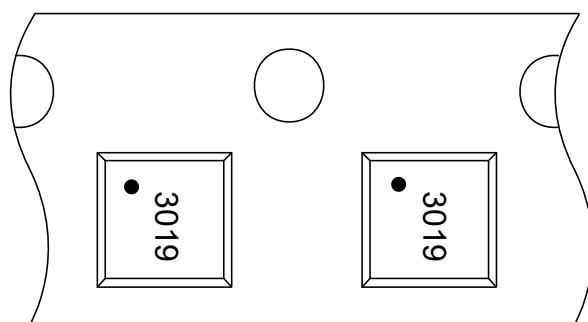
Reel Dimensions



Tape Dimensions



Unit: mm



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User Direction of Feed

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