

DFN2020-6 -30V 32mΩ -7A P-Channel MOSFET

MOSFET Product Summary

V_{DS}	$R_{DS(ON)}$ (Typ.)	I_D
-30V	20mΩ @-10V	-7A
	32mΩ @-4.5V	

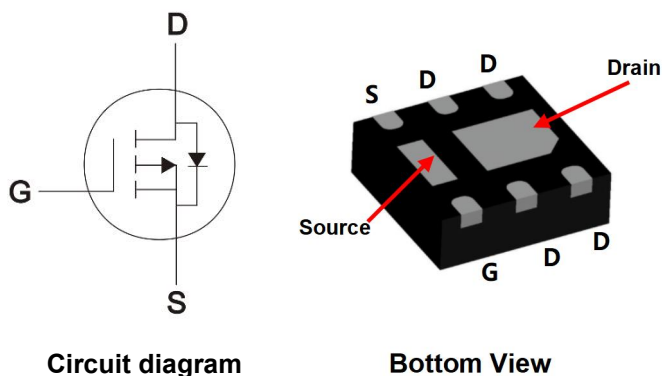
Description

The PM03P07D226 uses advanced trench technology and design to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for use in fast switching and general purpose applications.

Features

- Fast Switching
- Low Gate Charge and $R_{DS(ON)}$
- Low Reverse transfer capacitances

Dimensions and Pin Configuration



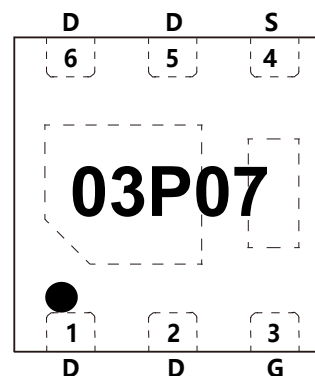
Mechanical Characteristics

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

Applications

- DC-DC Converter
- Load/Power Switching for portable device
- Power supply converters circuit

Marking Information



03P07 = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PM03P07D226	3000/Tape & Reel	7 inch

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ 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	-7	A
Pulsed Drain Current ^(Note2)	I_{DM}	-28	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

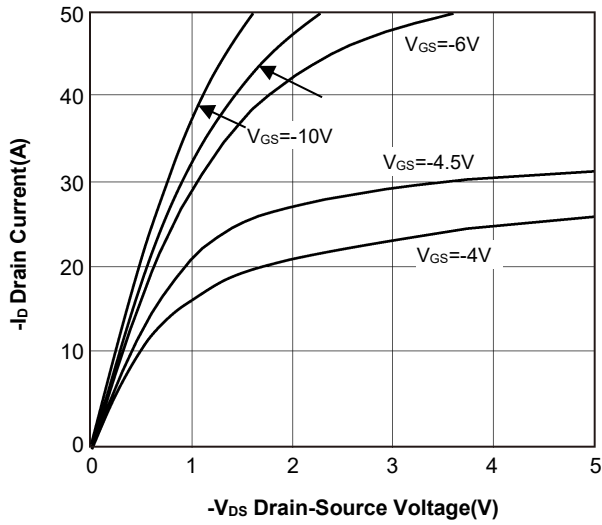
Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-to-Source Breakdown Voltage	V _{(BR)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	-1.1	-1.6	-2.2	V
Drain-to-Source On-Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-6A	-	20	25	mΩ
		V _{GS} =-4.5V, I _D =-4A	-	32	40	
Diode Forward Voltage	V _{SD}	I _S =-7A, V _{GS} =0V	-	-	-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	-	615	-	pF
Output Capacitance	C _{oss}		-	92	-	
Reverse Transfer Capacitance	C _{rss}		-	66	-	
Switching Characteristics						
Turn-on delay time	t _{d(on)}	V _{GS} =-10V, V _{DD} =-15V, I _D =-7A, R _{GEN} =6Ω	-	4.1	-	ns
Turn-on Rise time	t _r		-	35	-	
Turn-off delay time	t _{d(off)}		-	37.2	-	
Turn-off Fall time	t _f		-	20.6	-	
Gate Total Charge	Q _g	V _{GS} =-10V, V _{DD} =-15V, I _D =-7A	-	7.2	-	nC
Gate-Source charge	Q _{gs}		-	2.7	-	
Gate-Drain charge	Q _{gd}		-	2.6	-	

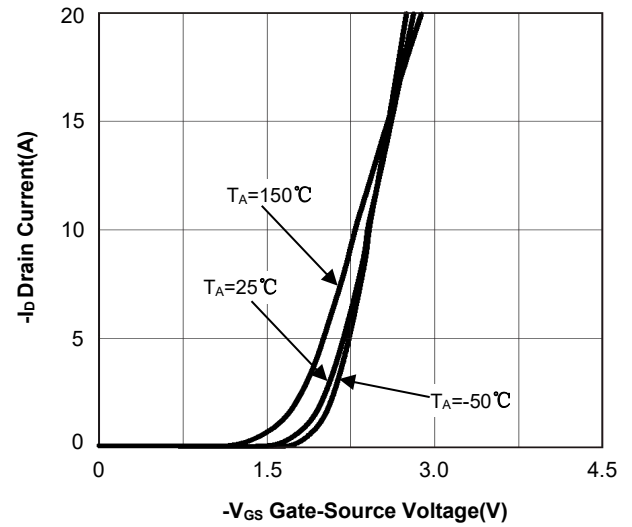
Notes:

1. This current is chip limited, which is calculated based on $R_{\theta JA}$.
2. This current is calculated on single pulse with 10 μs 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 $T_A=25^\circ\text{C}$.

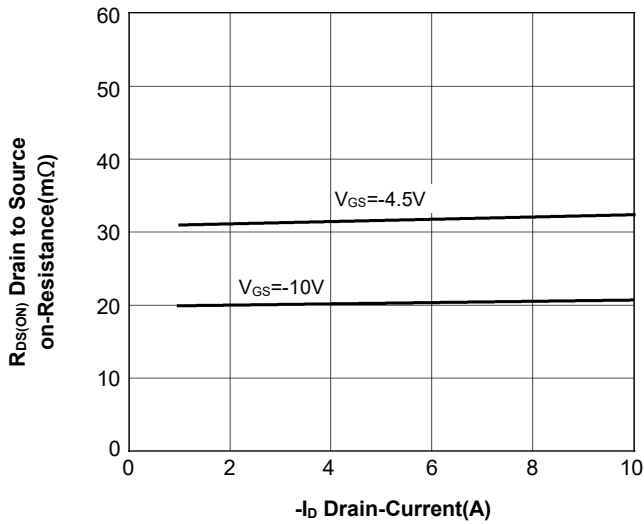
Typical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise specified)



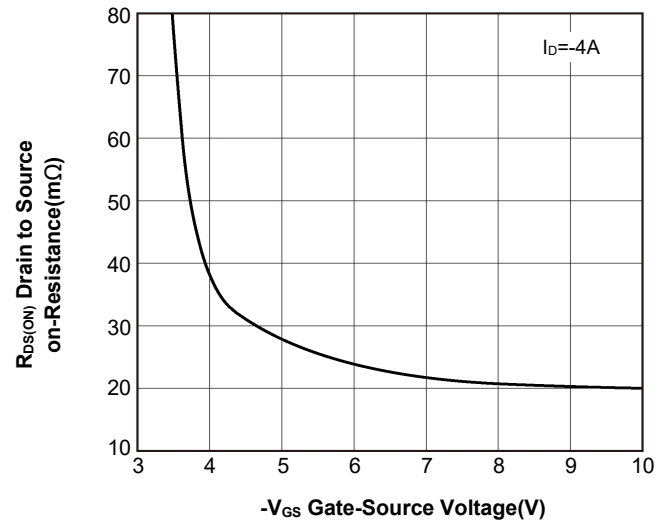
Drain Current vs. Drain-Source Voltage



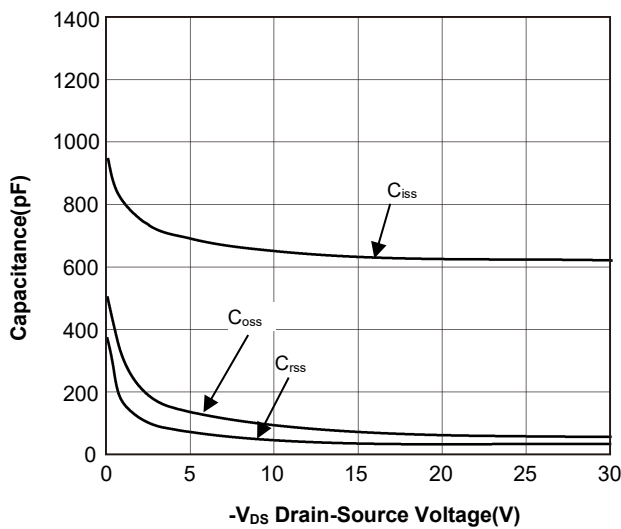
Drain Current vs. Gate-Source Voltage



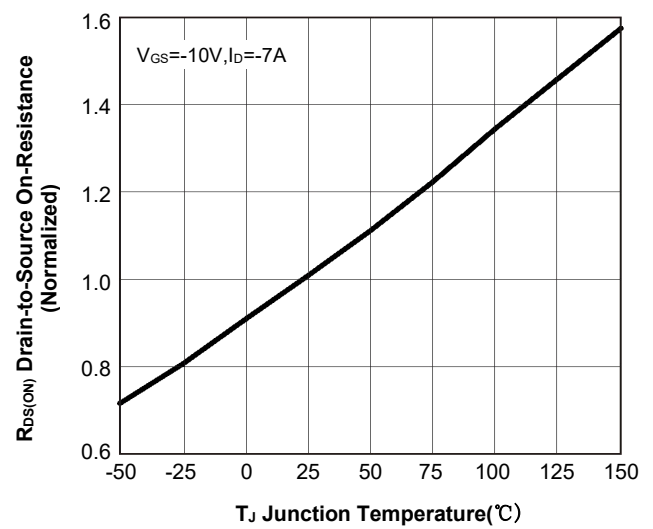
$R_{DS(ON)}$ On-Resistance vs. Drain-Current



On-Resistance vs. Gate-Source Voltage

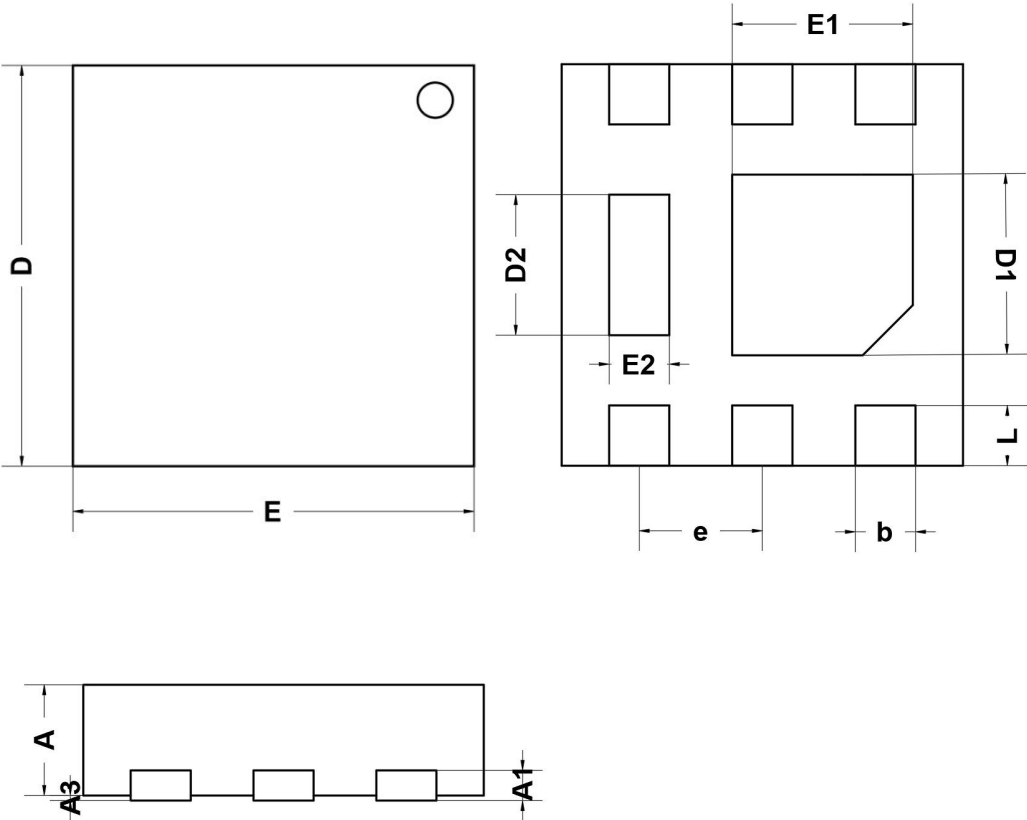


Capacitance vs. Drain-Source Voltage



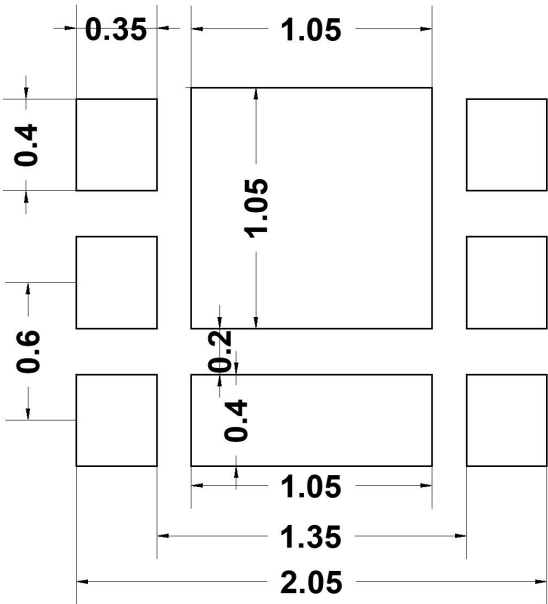
Normalized On-Resistance vs. Temperature

DFN2020-6 Package Outline Drawing



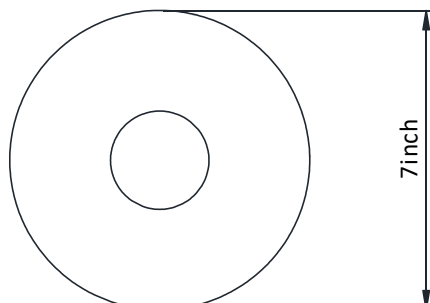
Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.5	0.55	0.6
A1	0.15REF		
A3	0.00	0.025	0.05
D	1.95	2.00	2.05
E	1.95	2.00	2.05
D1	0.875	0.90	0.925
E1	0.875	0.90	0.925
D2	0.675	0.70	0.725
E2	0.275	0.30	0.325
L	0.25	0.30	0.35
b	0.3REF		
e	0.65BSC		

Suggested Land Pattern (Unit: mm)

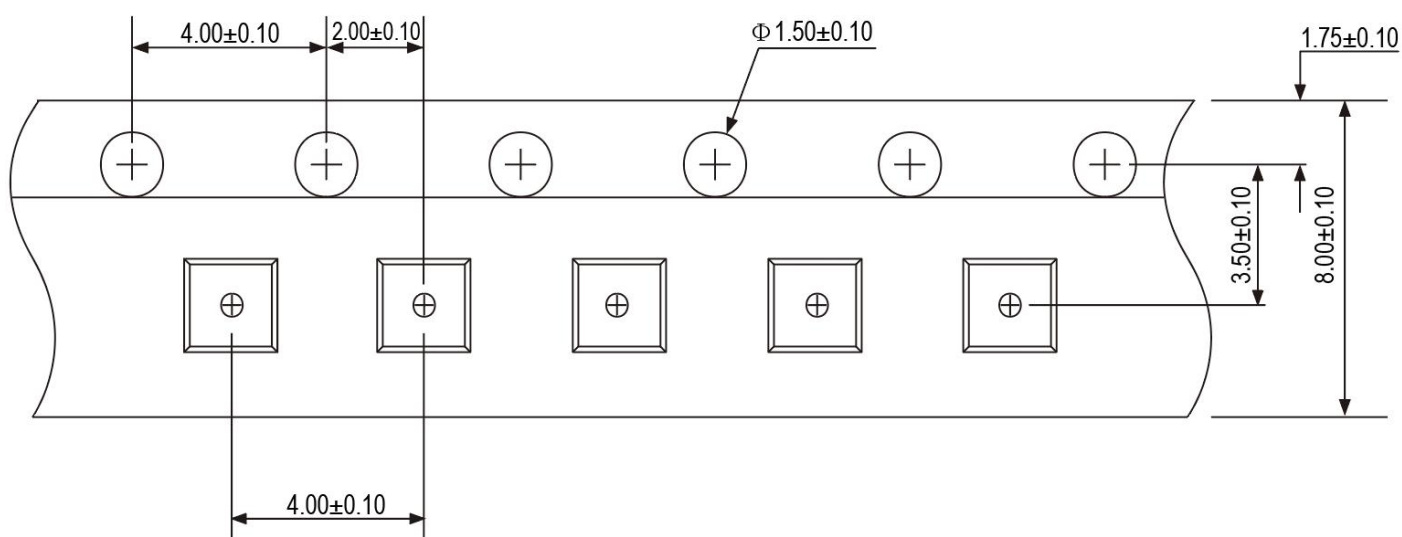


TAPE AND REEL INFORMATION

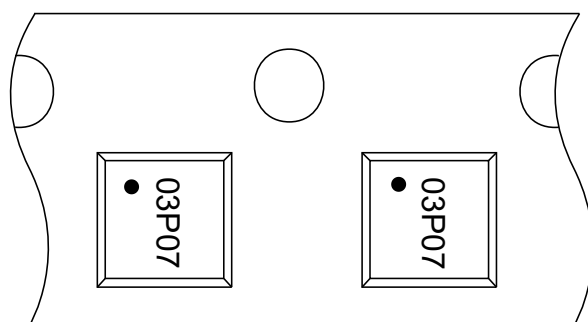
Reel Dimensions



Tape Dimensions



Unit:mm



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User Direction of Feed

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