

DFN1006-3 -20V 350mΩ P-Channel MOSFET

MOSFET Product Summary

V_{DS}	$R_{DS(ON)}$ (Typ.)	I_D
-20V	350mΩ @ $V_{GS}=-4.5V$	-1A
	500mΩ @ $V_{GS}=-2.5V$	

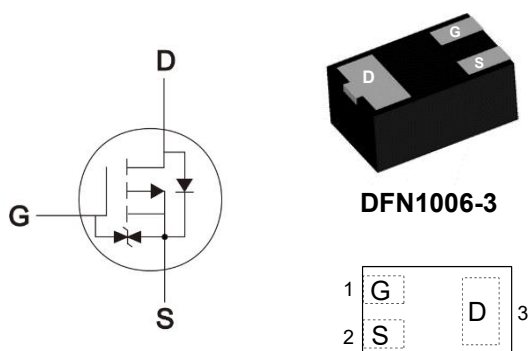
Description

The PM02P01P1 uses advanced Trench technology and designs to provide excellent $R_{DS(ON)}$ with low gate charge. This device is suitable for use in PWM, load switching and general purpose applications.

Features

- Surface Mount Package
- P-Channel Switch with Low $R_{DS(ON)}$
- Operated at Low Logic Level Gate Drive
- ESD Protected

Dimensions and Pin Configuration



Circuit Diagram Pin Configuration(Top View)

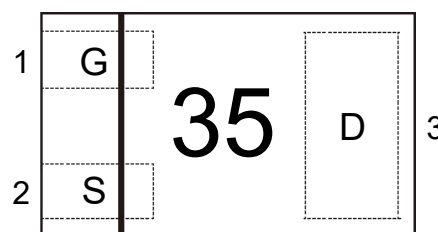
Mechanical Characteristics

- Package: DFN1006-3
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020
- Marking Information: See Below

Applications

- Load/Power Switching
- Interfacing Switching
- Battery Management for Ultra Small Portable Electronics
- Logic Level Shift

Marking Information



35 = Device Marking Code

Ordering Information

Part Number	Shipping	Reel Size
PM02P01P1	10000/Tape & Reel	7 inch

Absolute Maximum Ratings^(Note1) (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±10	V
Continuous Drain Current ^(Note5)	I _D	-1	A
Pulsed Drain Current ^(Note3)	I _{DM}	-1.8	A
Power Dissipation	P _D	0.2	W
Thermal Resistance from Junction to Ambient ^(Note2,4)	R _{θJA}	625	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-50~ +150	°C

Notes:

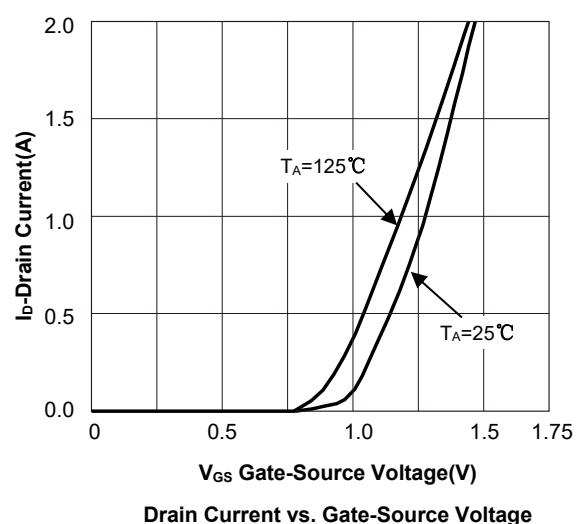
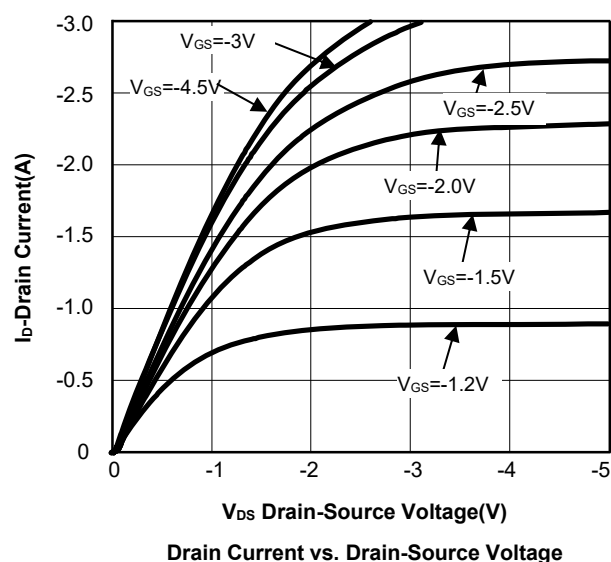
- Conditions out of those ranges listed in “absolute maximum ratings” may cause permanent damages to the devices. In spite of the limits above, functional operation conditions of the device should be within the ranges listed in “recommended operating conditions”. Exposure to absolute-maximum-rated conditions for prolonged periods may affect device reliability.
- Mounted on FR-4 material with 1inch², 2oz. Copper.
- Test condition 10us 25°C
- Thermal resistance from junction to ambient is highly dependent on PCB layout
- Rated according to R_{θJA}

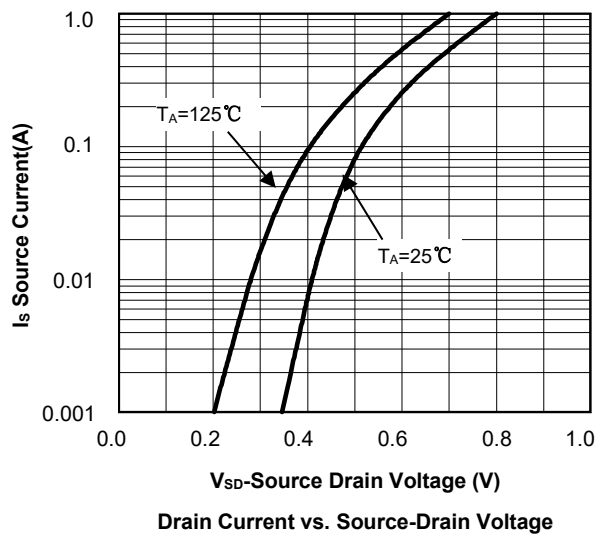
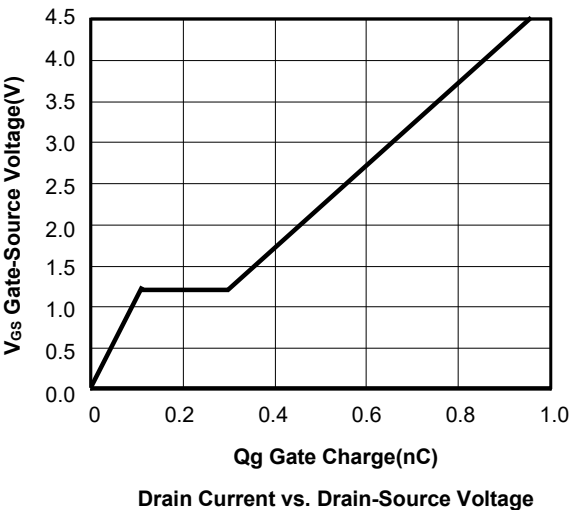
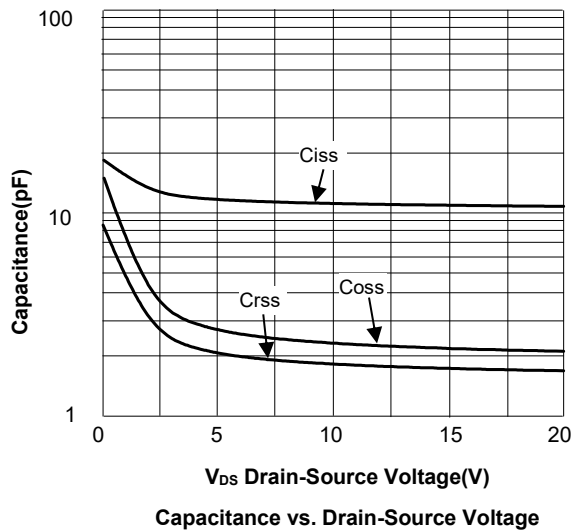
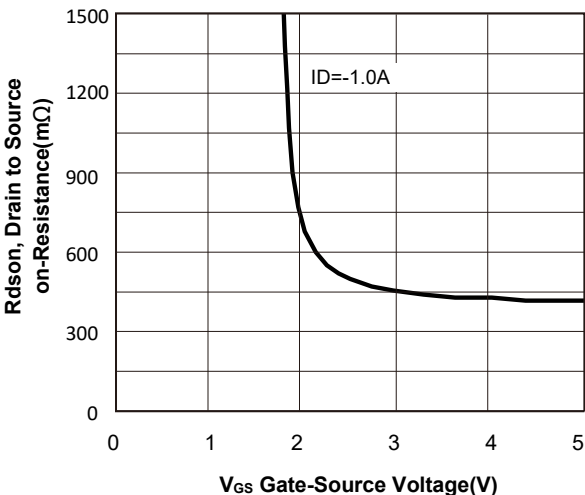
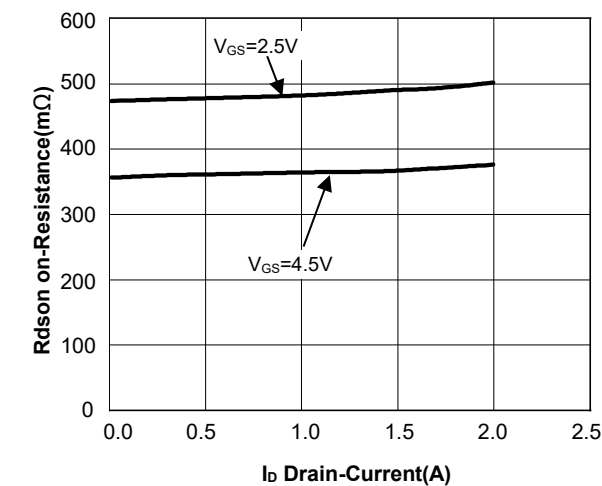
Electrical Characteristics (T_A=25°C unless otherwise specified)

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} = ±10V, V _{DS} = 0V	-	-	±5	μA
Gate threshold voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D = -250μA	-0.4	-0.7	-1.0	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = -4.5V, I _D = -0.8A		350	450	mΩ
		V _{GS} = -2.5V, I _D = -0.8A		500	600	

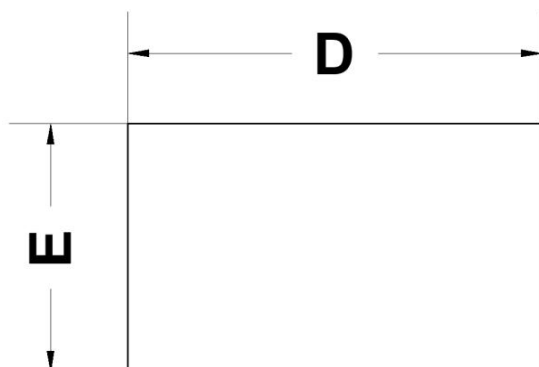
Diode forward voltage	V_{SD}	$I_S=-0.8A, V_{GS}=0V$	-	-	-1.2	V
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} =-10V, V_{GS} =0V,$ $f=1MHz$	-	12	-	pF
Output Capacitance	C_{oss}		-	2.5	-	
Reverse Transfer Capacitance	C_{rss}		-	0.8	-	
Switching Characteristics						
Gate Total Charge	Q_g	$V_{GS}=-4.5V, V_{DS}=-10V,$ $I_D=-0.45A$	-	1.0	-	nC
Gate-Source charge	Q_{gs}		-	0.2	-	
Gate-Drain charge	Q_{gd}		-	0.3	-	
Turn-on delay time	$t_{d(on)}$	$V_{GS}=-4.5V, V_{DS}=-10V,$ $I_D=-0.45A, R_L=6\Omega$	-	885	-	ns
Turn-on rise time	t_r		-	2313	-	
Turn-off delay time	$t_{d(off)}$		-	9500	-	
Turn-off fall time	t_f		-	6620	-	

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

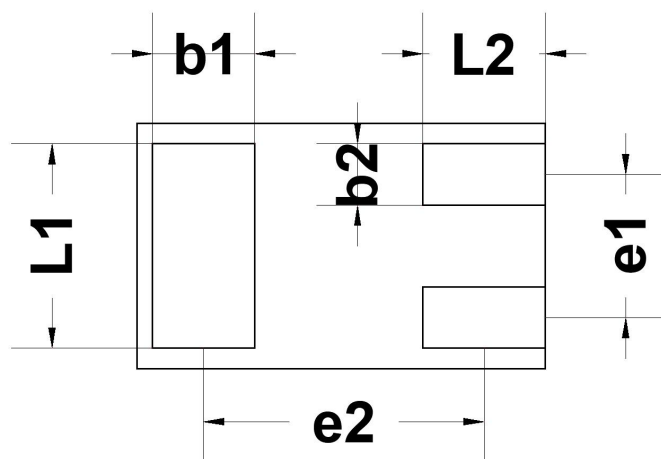




DFN1006-3 Package Outline Drawing

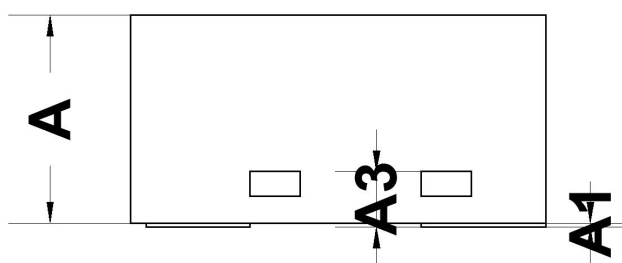


Top View



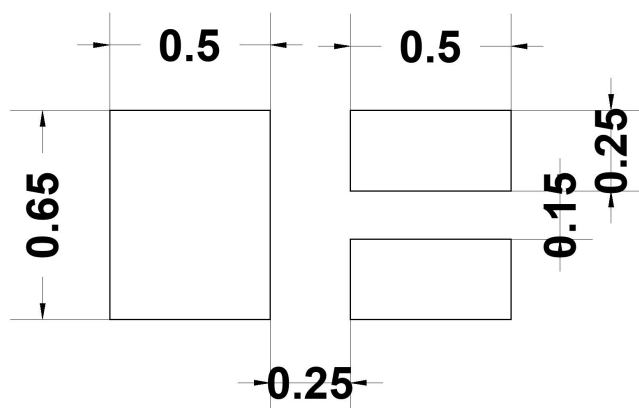
Bottom View

Symbol	Dimensions in Millimeters		
	Min.	Typ.	Max.
A	0.45	0.50	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b1	0.20	0.25	0.30
b2	0.10	0.15	0.20
L1	0.45	0.50	0.55
L2	0.25	0.30	0.35
e1	0.350 BSC		
e2	0.675 BSC		
A1	0.00	---	0.015
A3	0.119	---	0.15

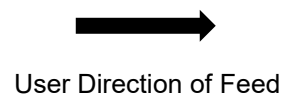


Side View

Recommended PCB Layout (Unit: mm)



Reel Dimensions



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