



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-20V	5.8mΩ@-4.5V	-45A
	7.5mΩ@-2.5V	

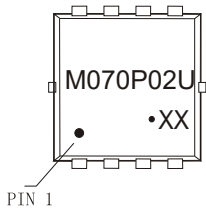
Feature

- Trench Technology Power MOSFET
- Low $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance

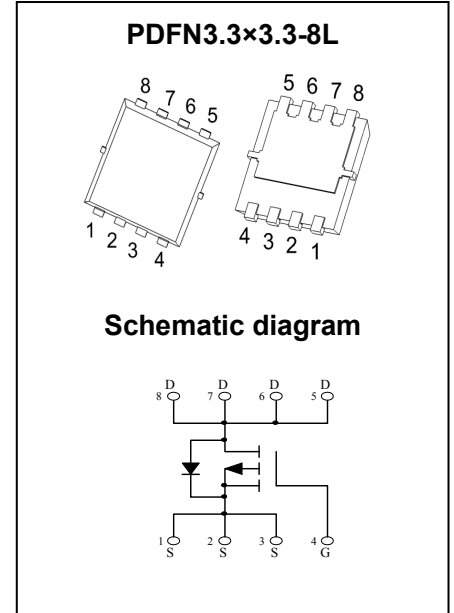
Application

- Load Switch
- Battery Protection

MARKING:



M070P02U = Device Code
 XX = Date Code
 Solid Dot = Green Indicator



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	-20	V
Gate - Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ¹	I_D	-45	A
Pulsed Drain Current ²	I_{DM}	-180	A
Power Dissipation ⁴	P_D	83	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	55	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

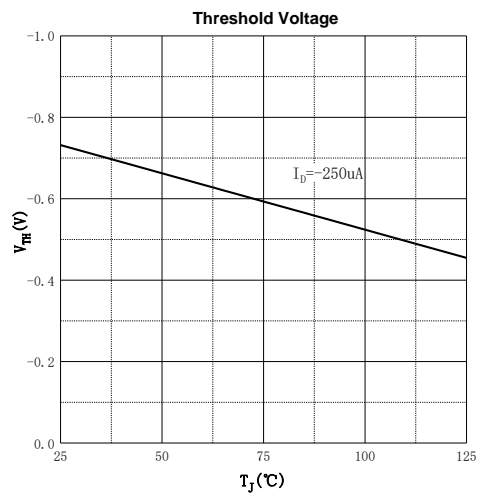
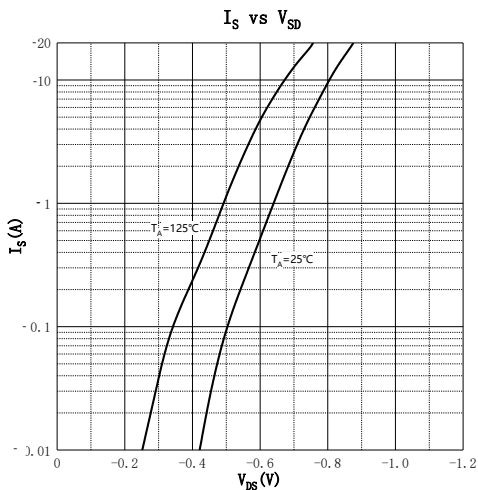
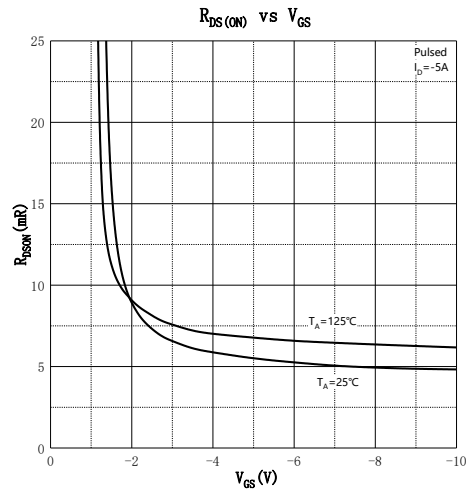
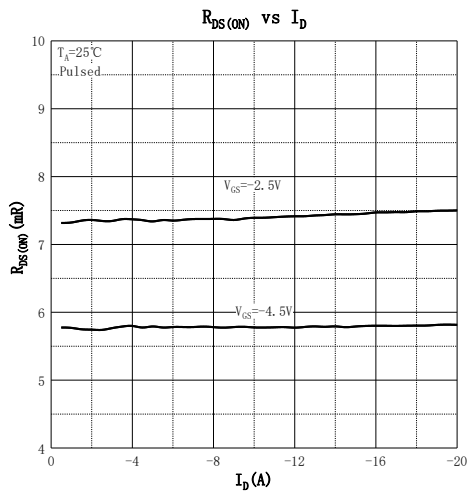
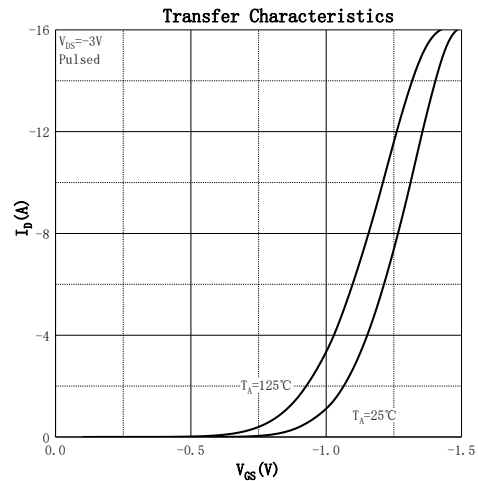
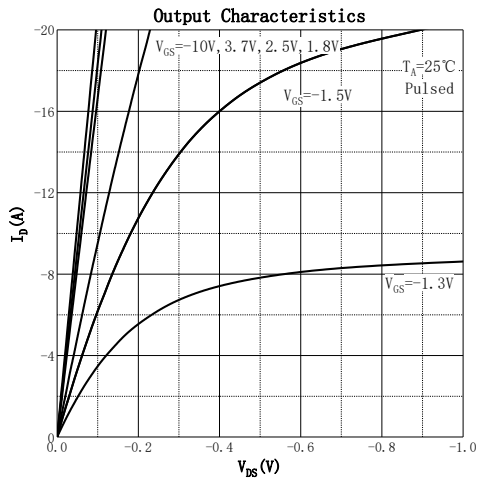
MOSFET ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -16V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
On Characteristics³						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-0.4	-0.75	-1.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -4.5V, I_D = 20A$		5.8	7	m Ω
		$V_{GS} = -2.5V, I_D = 20A$		7.5	9	
Forward Transconductance	g_{FS}	$V_{DS} = -5V, I_D = -20A$	50			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -10V, V_{GS} = 0V, f = 1MHz$		3600		pF
Output Capacitance	C_{oss}			560		
Reverse Transfer Capacitance	C_{rss}			440		
Gate Resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		3		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -10V, V_{GS} = -4.5V, I_D = -20A$		50		nC
Gate-source Charge	Q_{gs}			9		
Gate-drain Charge	Q_{gd}			14		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -10V, V_{GS} = -4.5V, R_L = 3\Omega, R_G = 0.5\Omega$		16		ns
Turn-on Rise Time	t_r			40		
Turn-off Delay Time	$t_{d(off)}$			83		
Turn-off Fall Time	t_f			22		
Source - Drain Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = -20A$			-1.2	V

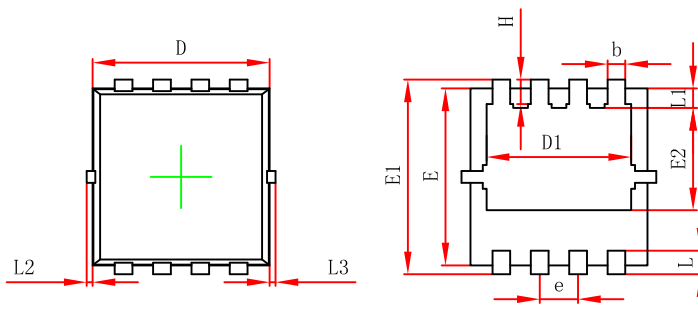
Notes :

- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.And device mounted on a large heatsink
- 5.Device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics

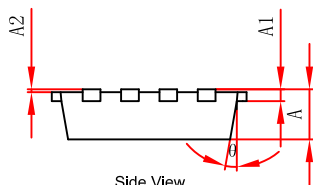


PDFN3.3×3.3-8L Package Information



Top View
[顶视图]

Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)