



### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-30V	6.8m $\Omega$ @-10V	-60A
	10.8m $\Omega$ @-4.5V	

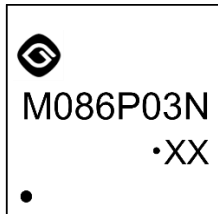
### Feature

- Trench Technology Power MOSFET
- Low  $R_{DS(ON)}$
- Low Gate Charge
- Low Gate Resistance
- 100% UIS Tested

### Application

- Power Switching Application

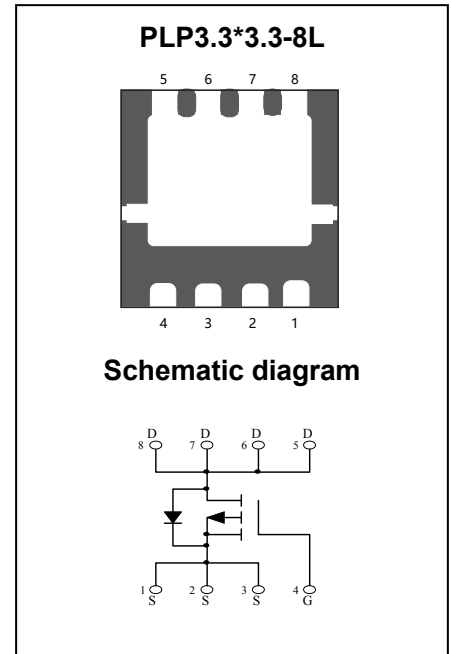
### MARKING:



M086P03N = Device Code

XX = Date Code

•XX Solid Dot = Green Indicator



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

Parameter	Symbol	Value	Unit
Drain - Source Voltage	$V_{DS}$	-30	V
Gate - Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current <sup>1</sup>	$I_D$	-60	A
Continuous Drain Current <sup>1</sup>	$I_D$	-40	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-240	A
Single Pulsed Avalanche Current <sup>3</sup>	$I_{AS}$	-28	A
Single Pulsed Avalanche Energy <sup>3</sup>	$E_{AS}$	196	mJ
Power Dissipation <sup>5</sup>	$P_D$	50	W
Thermal Resistance from Junction to Ambient <sup>6</sup>	$R_{\theta JA}$	50	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	2.5	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^\circ\text{C}$

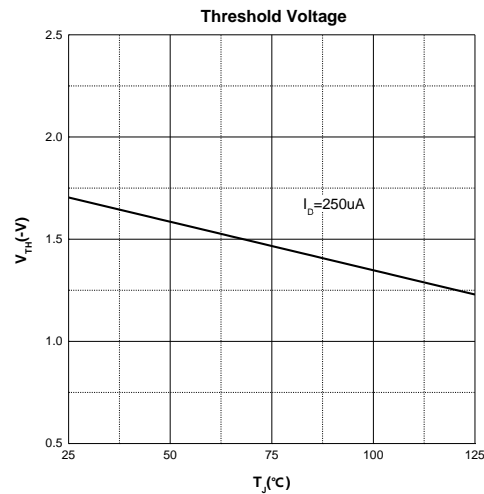
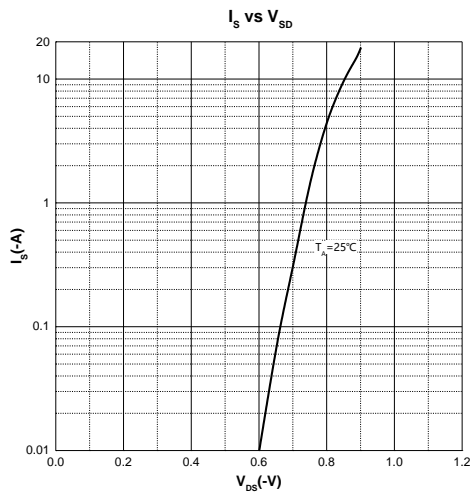
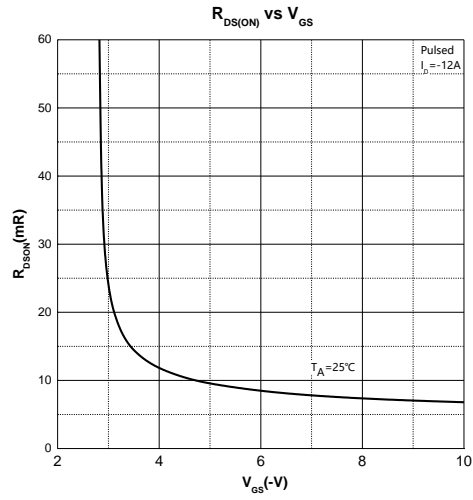
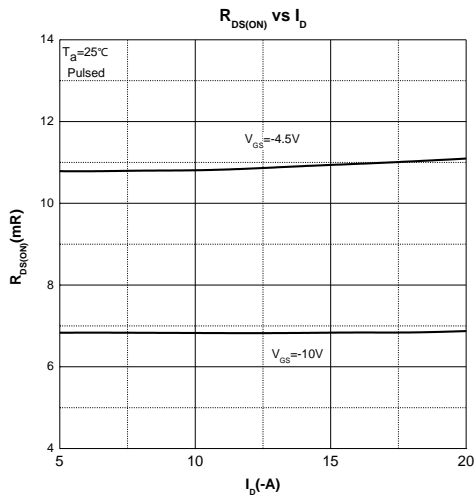
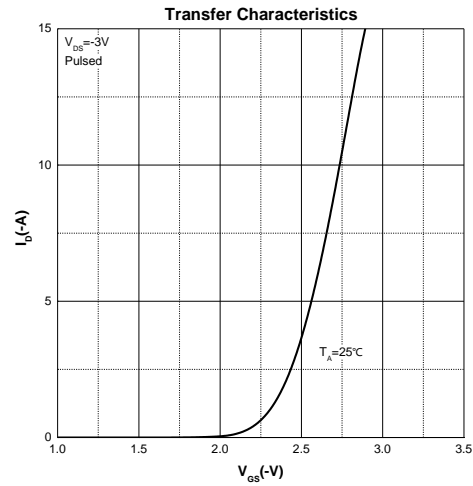
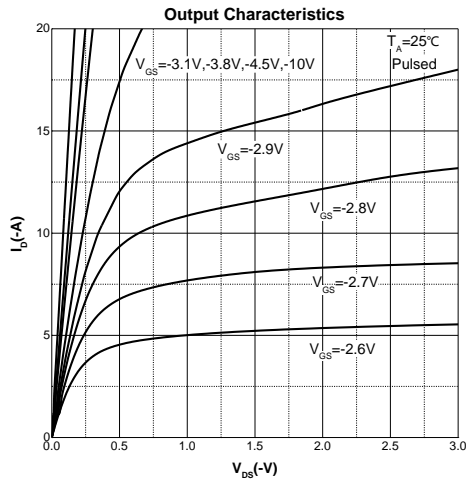
## MOSFET ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-30			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -24V, V_{GS} = 0V$			-1	$\mu A$
Gate - Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
<b>On Characteristics<sup>4</sup></b>						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.7	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5.0A$		6.8	8.6	m $\Omega$
		$V_{GS} = -4.5V, I_D = -5.0A$		10.8	14	
Forward Transconductance	$g_{FS}$	$V_{DS} = -10V, I_D = -5.0A$	10			S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$		3640		pF
Output Capacitance	$C_{oss}$			488		
Reverse Transfer Capacitance	$C_{rss}$			458		
Gate Resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		5		$\Omega$
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -15V, V_{GS} = -10V, I_D = -10A$		60		nC
Gate-source Charge	$Q_{gs}$			15		
Gate-drain Charge	$Q_{gd}$			18		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -15V, V_{GS} = -10V,$ $R_L = 3\Omega, R_G = 3\Omega$		25		ns
Turn-on Rise Time	$t_r$			11		
Turn-off Delay Time	$t_{d(off)}$			136		
Turn-off Fall Time	$t_f$			49		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>4</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = -5.0A$			-1.2	V

Notes :

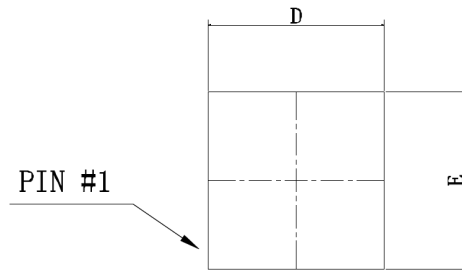
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width  $\leq 10\mu s$ , duty cycle  $\leq 1\%$ .
- 3.EAS condition:  $V_{DD} = -15V, V_{GS} = -10V, L = 0.5mH, R_G = 25\Omega$  Starting  $T_J = 25^\circ\text{C}$ .
- 4.Pulse Test : Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .
- 5.The power dissipation  $P_D$  is limited by  $T_{J(MAX)} = 150^\circ\text{C}$ .And device mounted on a large heatsink
- 6.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**

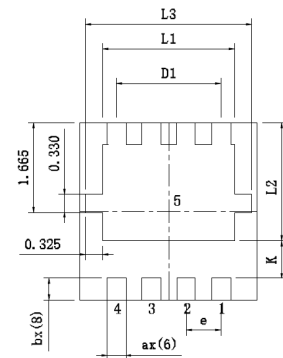


## PLP3.3\*3.3-8L Package Information

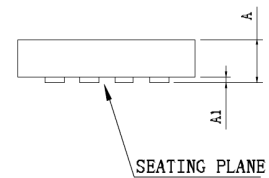
symbol	Dimension in mm		
	MIN	NOM	MAX
A	0.650	0.700	0.750
A1	0.050	0.100	0.150
D	3.200	3.300	3.400
E	3.200	3.300	3.400
D1	---	1.950	---
e	---	0.650	---
ax(6)	0.300	0.350	0.400
bx(8)	0.350	0.400	0.450
L1	2.400	2.450	2.500
L2	2.150	2.200	2.250
L3	3.050	3.100	3.150
K	0.600	0.700	0.800



Top View



Bottom View



Side View

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)