

### Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
-60V	24mΩ@-10V	-25A

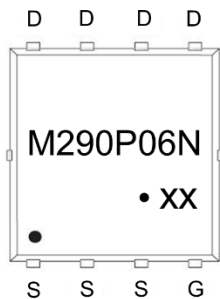
### Feature

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

### Application

- Power Switching Application

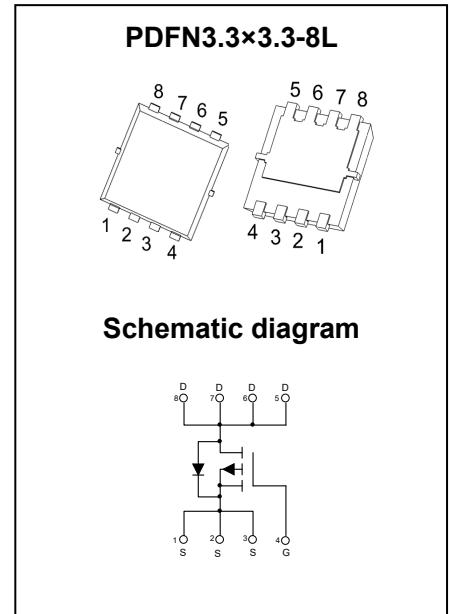
### MARKING:



M290P06N = 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	$V_{DS}$	-60	V
Gate - Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>1</sup>	$I_D$	-25	A
Continuous Drain Current <sup>6</sup>	$I_D$	-10	A
Pulsed Drain Current <sup>2</sup>	$I_{DM}$	-100	A
Single Pulsed Avalanche Current <sup>3</sup>	$I_{AS}$	-27	A
Single Pulsed Avalanche Energy <sup>3</sup>	$E_{AS}$	180	mJ
Power Dissipation <sup>5</sup>	$P_D$	24	W
Power Dissipation <sup>6</sup>	$P_D$	2.1	W
Thermal Resistance from Junction to Ambient <sup>6</sup>	$R_{\theta JA}$	60	°C/W
Thermal Resistance from Junction to Case	$R_{\theta JC}$	5.2	°C/W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	-55~ +150	°C

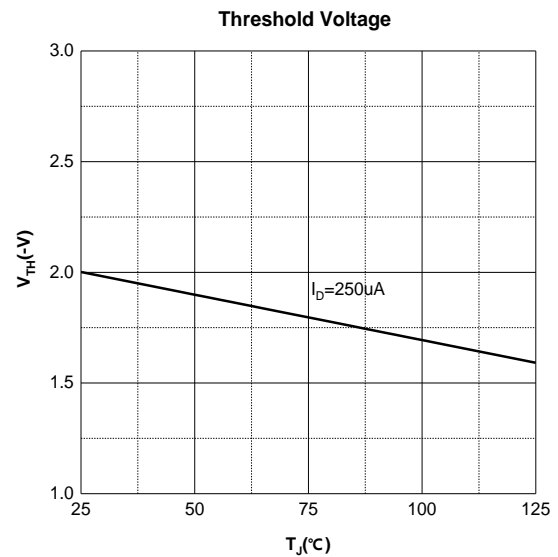
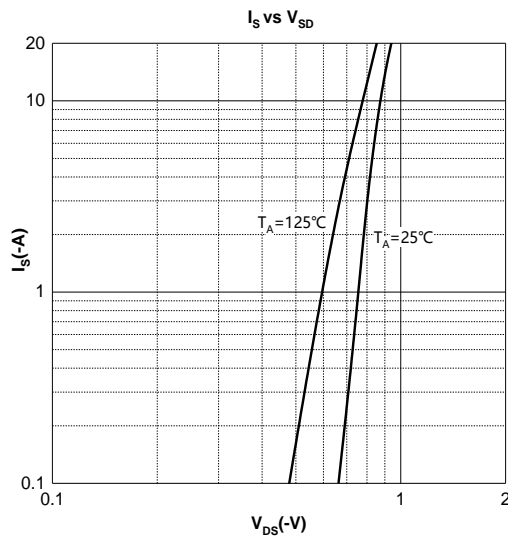
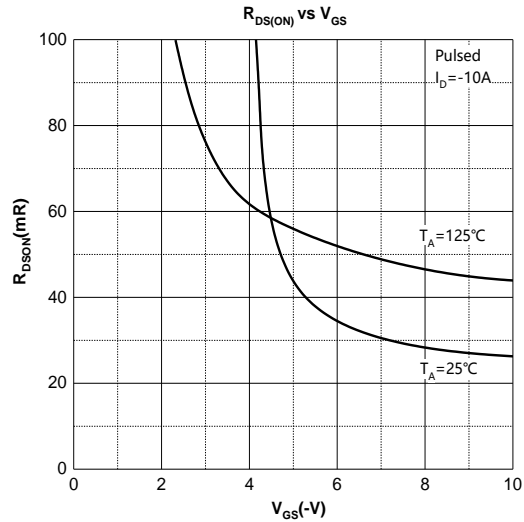
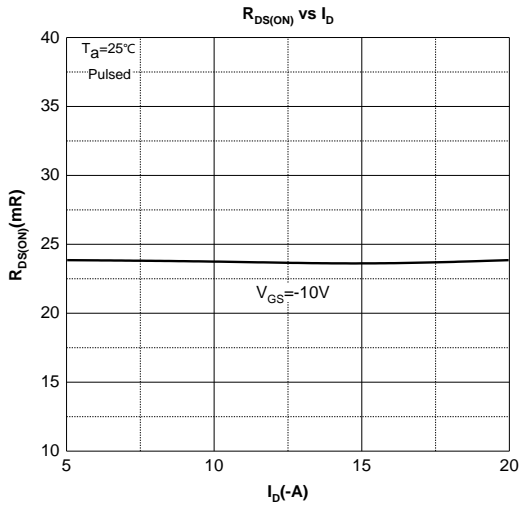
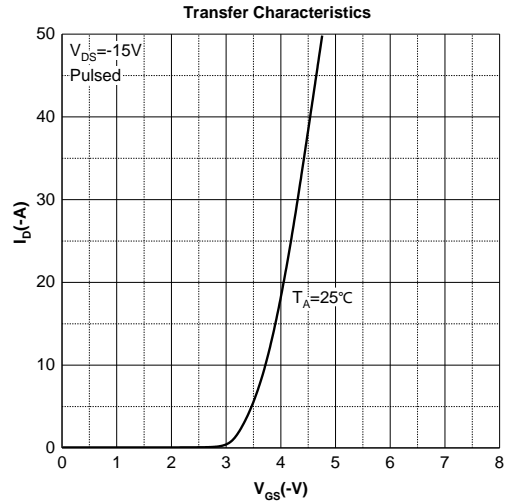
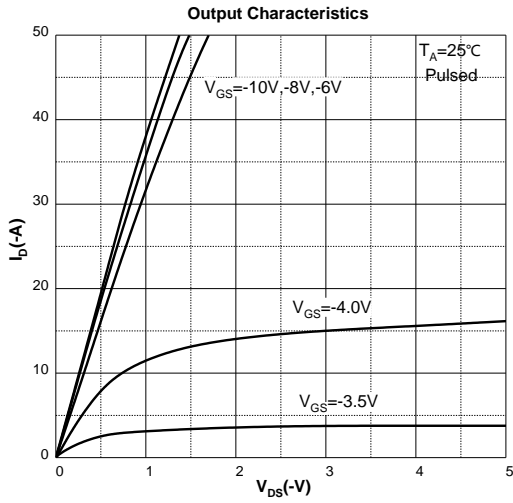
## MOSFET ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ unless otherwise noted)

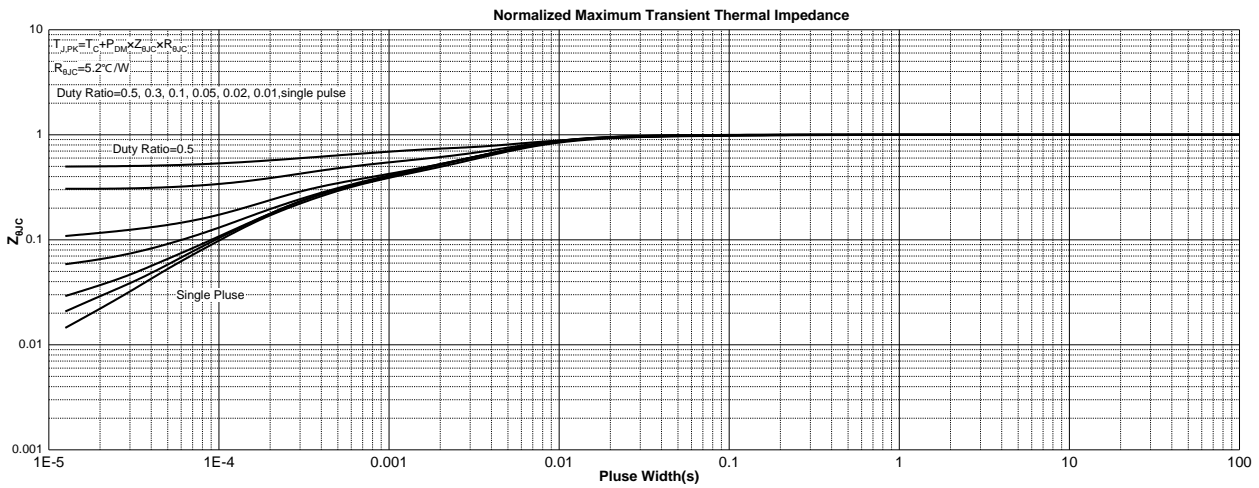
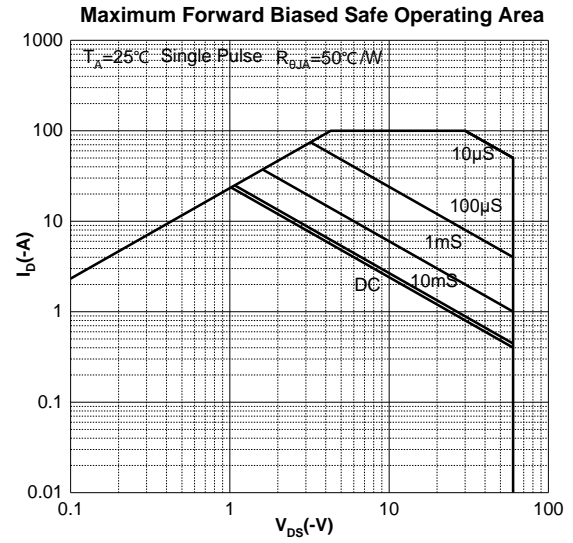
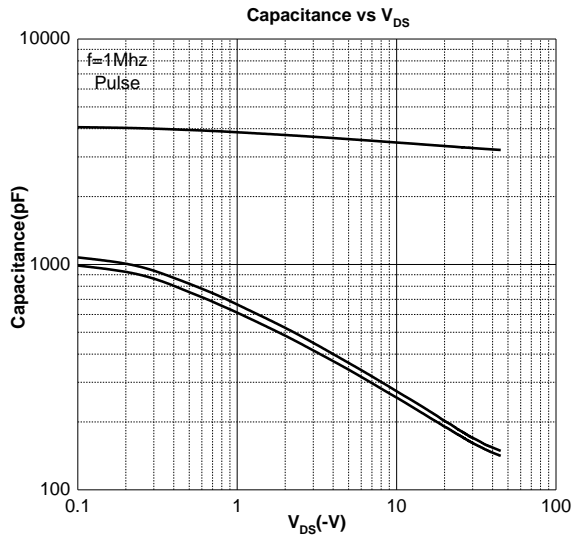
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-60			V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -48V, V_{GS} = 0V$			-1	$\mu A$
Gate - Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	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	-2.0	-3.0	V
Drain-source On-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -5A$		24	29	m $\Omega$
Forward Transconductance	$g_{FS}$	$V_{DS} = -10V, I_D = -8A$		16		S
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -30V, V_{GS} = 0V, f = 1MHz$		3285		pF
Output Capacitance	$C_{oss}$			170		
Reverse Transfer Capacitance	$C_{rss}$			161		
Gate Resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		5		$\Omega$
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -30V, V_{GS} = -10V, I_D = -10A$		48		nC
Gate-source Charge	$Q_{gs}$			14		
Gate-drain Charge	$Q_{gd}$			18		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -30V, V_{GS} = -10V, R_L = 3\Omega$ $R_G = 3\Omega$		17.5		ns
Turn-on Rise Time	$t_r$			24		
Turn-off Delay Time	$t_{d(off)}$			35		
Turn-off Fall Time	$t_f$			40		
<b>Source - Drain Diode Characteristics</b>						
Diode Forward Voltage <sup>4</sup>	$V_{SD}$	$V_{GS} = 0V, I_S = -10A$			-1.2	V

Notes :

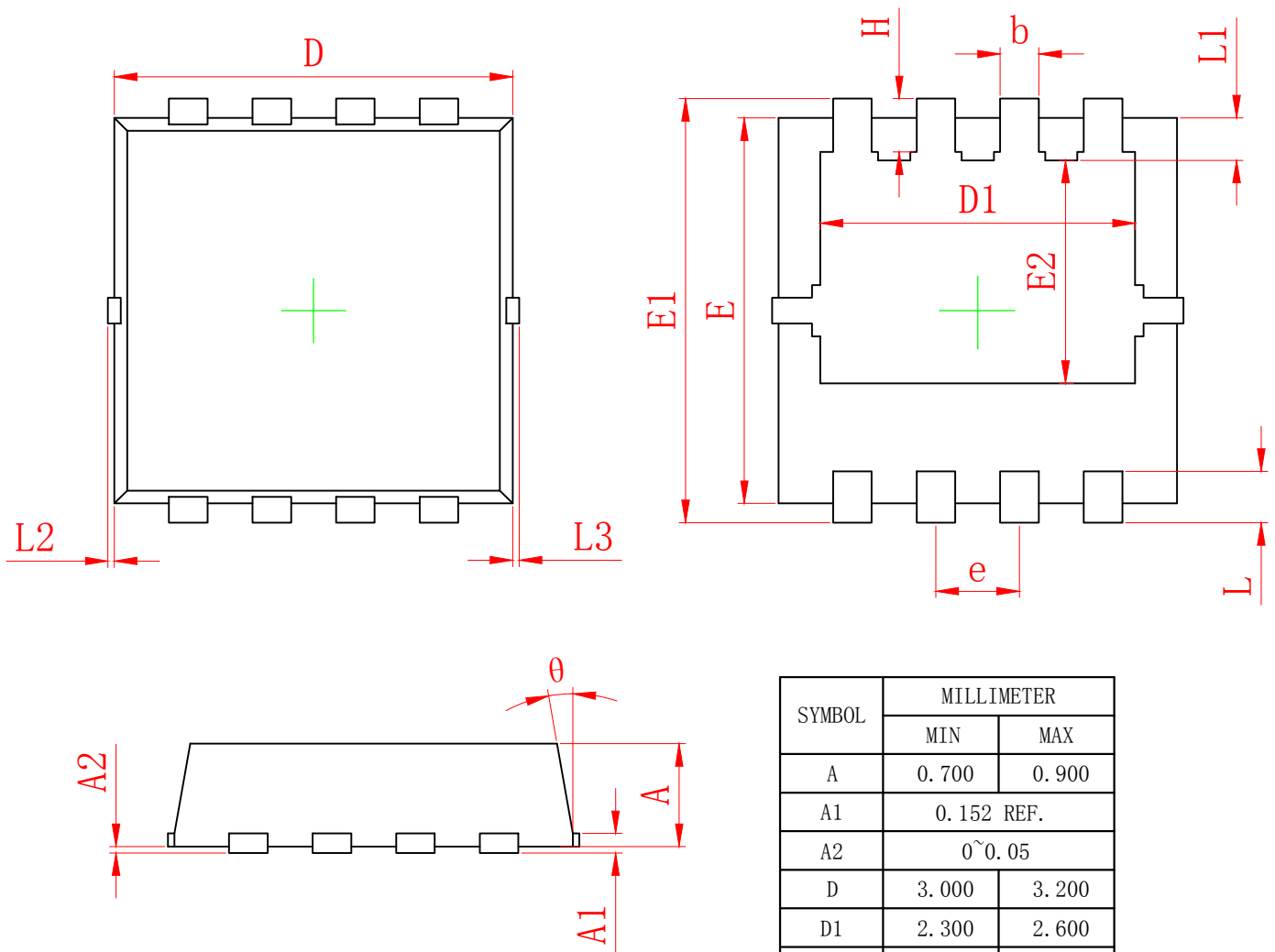
- 1.The maximum current rating is limited by package.And device mounted on a large heatsink
- 2.Pulse Test : Pulse Width  $\leq 10\mu s$ , duty cycle  $\leq 1\%$ .
- 3.EAS condition:  $V_{DD} = -15V, V_{GS} = -10V, L = 0.5mH, R_G = 25\Omega$  Starting  $T_J = 25^\circ\text{C}$ .
- 4.Pulse Test : Pulse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





## PDFN3.3×3.3-8L Package Information



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.700	0.900
A1	0.152 REF.	
A2	0 <sup>~</sup> 0.05	
D	3.000	3.200
D1	2.300	2.600
E	2.900	3.100
E1	3.150	3.450
E2	1.535	1.935
b	0.200	0.400
e	0.550	0.750
L	0.300	0.500
L1	0.180	0.480
L2	0 <sup>~</sup> 0.100	
L3	0 <sup>~</sup> 0.100	
H	0.315	0.515
$\theta$	8°	12°

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)