

General Description

The MY12P02NE3 is the single P-Channel logic enhancement mode power field effect transistors to provide excellent $R_{DS(on)}$, low gate charge and low gate resistance.

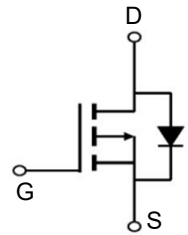
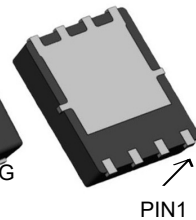
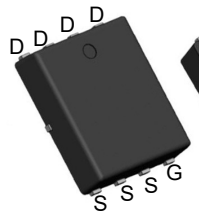


Features

V_{DSS}	-20	V
I_D	-12	A
$R_{DS(ON)}$ (at $V_{GS} = -4.5V$)	15.5	m Ω
$R_{DS(ON)}$ (at $V_{GS} = -2.5V$)	22	m Ω

Application

- Video monitor
- Power management



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY12N02NE3	PDFN3*3-8L	MY12N02NE3	5000

Absolute Maximum Ratings ($T_J=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Rating	Units
VDS	Drain-Source Voltage	-20	V
VGS	Gate-Source Voltage	± 12	V
$I_{D@T_A=25^{\circ}C}$	Drain Current ³ , V_{GS} @ 10V	-12	A
$I_{D@T_A=70^{\circ}C}$	Drain Current ³ , V_{GS} @ 10V	-4.5	A
IDM	Pulsed Drain Current ¹	-20	A
$P_{D@T_A=25^{\circ}C}$	Total Power Dissipation	0.7	W
TSTG	Storage Temperature Range	-55 to 150	$^{\circ}C$
T_J	Operating Junction Temperature Range	-55 to 150	$^{\circ}C$
Rthj-c	Maximum Thermal Resistance, Junction- case	190	$^{\circ}C/W$
Rthj-a	Maximum Thermal Resistance, Junction- ambient ³	178	$^{\circ}C/W$

MY12P02NE3

-20V P-Channel Enhancement Mode MOSFET



Electrical Characteristics (T_J=25 °C, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{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			-100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D =-250μA	-0.4	-0.7	-1.0	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} = -4.5V, I _D =- 15A		15.5	21	mΩ
		V _{GS} = -2.5V, I _D =-10 A		22	30	
Diode Forward Voltage	V _{SD}	I _S =-2.3A,V _{GS} =0V		-0.8	-1.2	V
Maximum Body-Diode Continuous Current	I _S				-1.3	A
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =-10V,V _{GS} =0V,f=1MHZ		1782		pF
Output Capacitance	C _{oss}			250.52		
Reverse Transfer Capacitance	C _{rss}			241.26		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =-4.5V,V _{DS} =-10V,I _D =-2.3A		3.3		nC
Gate Source Charge	Q _{gs}			0.7		
Gate Drain Charge	Q _{gd}			1.3		
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V,V _{DD} =-10V, I _D =-1A, R _{GEN} =2.5Ω		12		ns
Turn-on Rise Time	t _r			54		
Turn-off Delay Time	t _{D(off)}			15		
Turn-off Fall Time	t _f			9		

A. A.Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.

B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Typical Characteristics

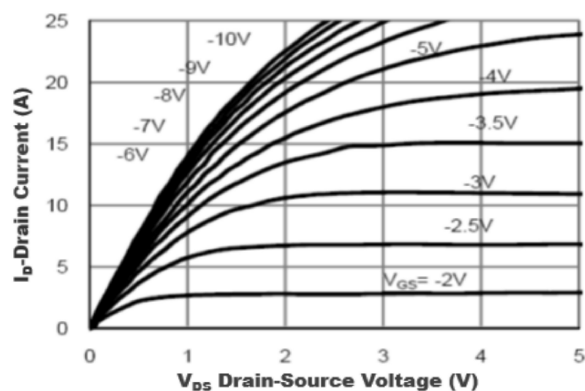


Figure1. Output Characteristics

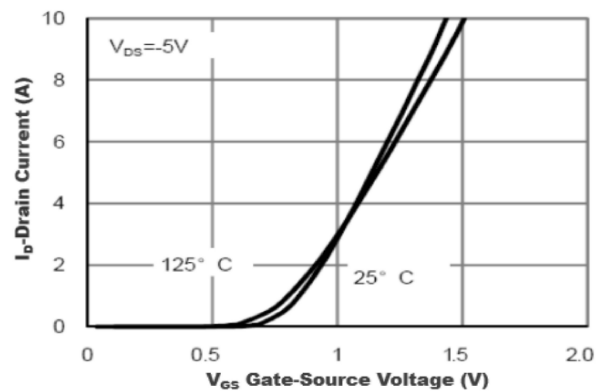


Figure2. Transfer Characteristics

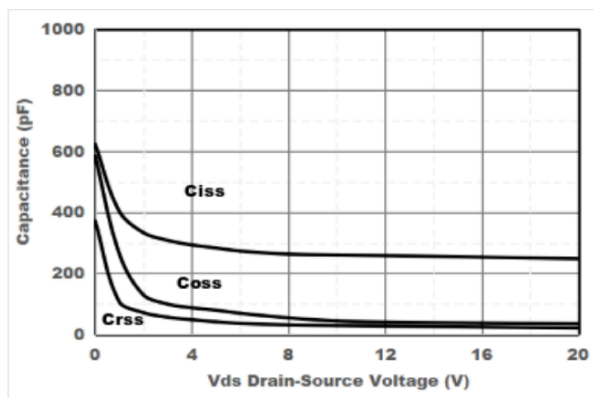


Figure3. Capacitance Characteristics

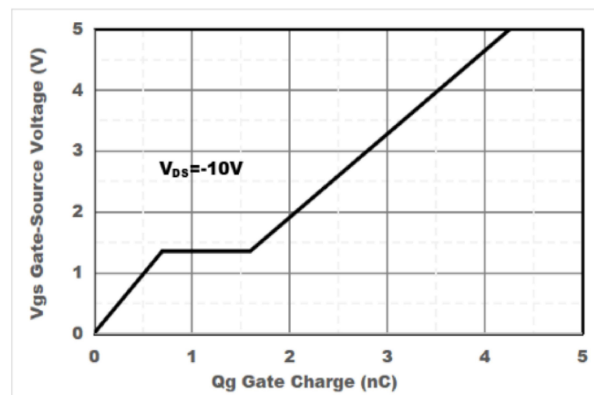


Figure4. Gate Charge

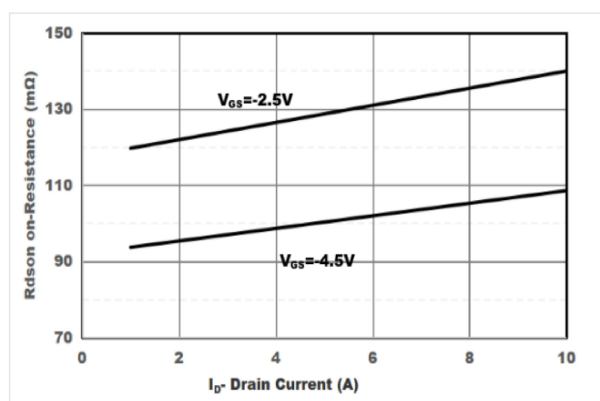


Figure5. Drain-Source on Resistance

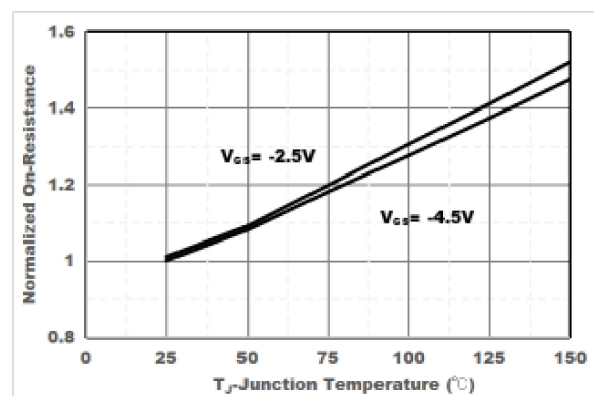


Figure6. Drain-Source on Resistance

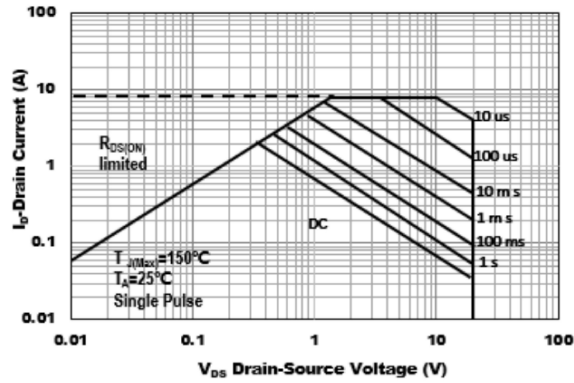


Figure7. Safe Operation Area

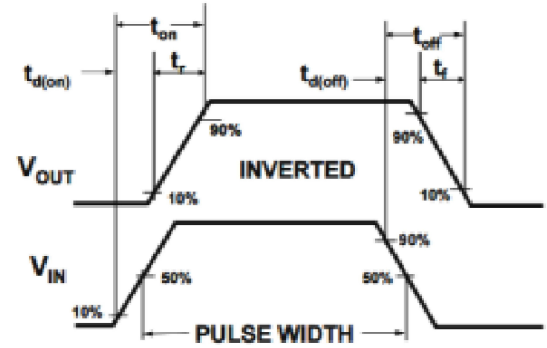
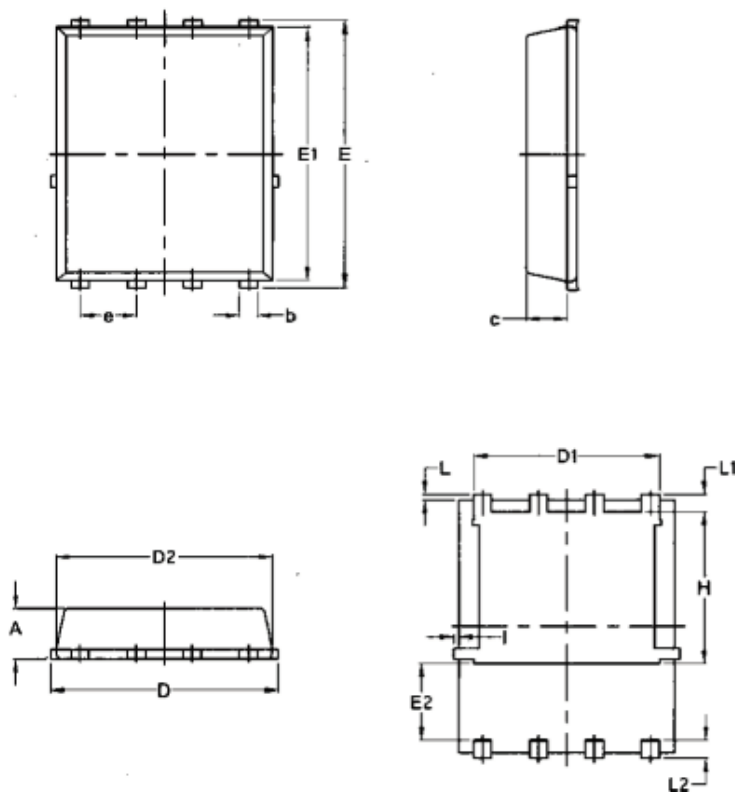


Figure8. Switching wave

Package Mechanical Data-DFN3*3-8L-JQ Single



COMMON DIMENSIONS

(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	0.70	0.80	0.90
A1	0.00	0.03	0.05
b	0.24	0.30	0.35
c	0.10	0.15	0.20
D	3.25	3.32	3.40
D1	3.05	3.15	3.25
D2	2.40	2.50	2.60
E	3.00	3.10	3.20
E1	1.35	1.45	1.55
e	0.65 BSC.		
H	3.20	3.30	3.40
L	0.30	0.40	0.50
L1	0.10	0.15	0.20
L2	1.13 REF.		