

## General Description

The MY8808BBNE3 is the highest performance trench N-CH MOSFETS with extreme high cell density, which provide excellent  $R_{DS(ON)}$  and gate charge for most of the small power switching and load switch applications.

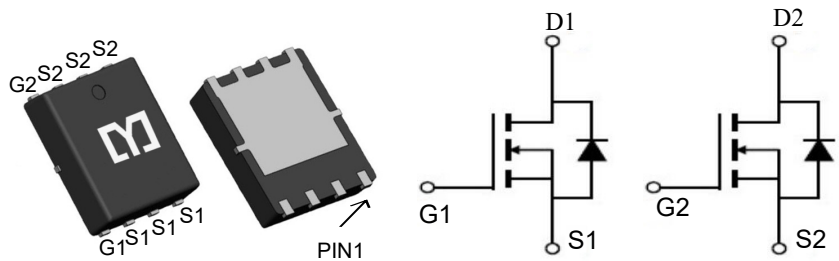


## Features

$V_{DSS}$	20	V
$I_D$	7	A
$R_{DS(ON)}$ (at $V_{GS}=4.5V$ )	<14.5	m $\Omega$
$R_{DS(ON)}$ (at $V_{GS}=2.5V$ )	<17	m $\Omega$

## Application

- Battery protection
- Load switch
- Uninterruptible power supply



## Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MY8808BBNE3	PDFN3*3-8	NULL	5000

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

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	20	V
$V_{GS}$	Gate-Source Voltage	$\pm 12$	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current, $V_{GS}$ @ 4.5V <sup>1</sup>	7	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current, $V_{GS}$ @ 4.5V <sup>1</sup>	5.8	A
$I_{DM}$	Pulsed Drain Current <sup>2</sup>	70	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation <sup>1</sup>	1.56	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction-Ambient <sup>1</sup> ( $t \leq 10s$ )	80	$^\circ\text{C/W}$

**Electrical Characteristics (T<sub>J</sub>=25 °C, unless otherwise noted)**

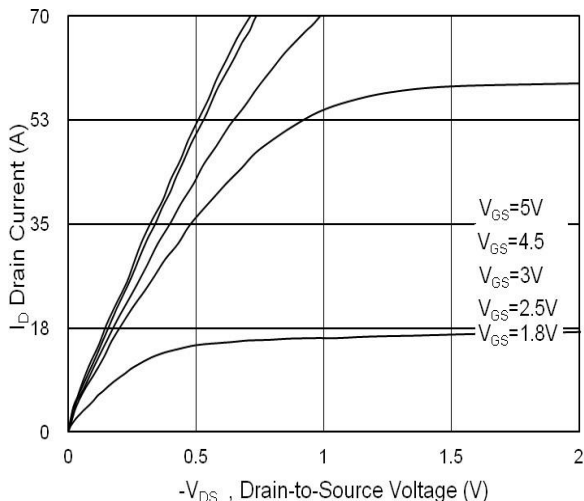
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V , I <sub>D</sub> =250uA	20	---	---	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sup>2</sup>	V <sub>GS</sub> =4.5V , I <sub>D</sub> =5.5A	14.5	16	19.5	mΩ
		V <sub>GS</sub> =3.7V , I <sub>D</sub> =5.5A	15.0	17.5	20.5	
		V <sub>GS</sub> =2.5V , I <sub>D</sub> =5.5A	17	18.2	22.2	
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>GS</sub> =V <sub>DS</sub> , I <sub>D</sub> =250uA	0.5	---	1.5	V
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =18V , V <sub>GS</sub> =0V , T <sub>J</sub> =25°C	---	---	1	uA
		V <sub>DS</sub> =18V , V <sub>GS</sub> =0V , T <sub>J</sub> =55°C	---	---	5	
I <sub>GSS</sub>	Gate-Source Leakage Current	V <sub>GS</sub> =± 12V , V <sub>DS</sub> =0V	---	---	± 10	uA
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =5V , I <sub>D</sub> =5.5A	---	38	---	S
Q <sub>g</sub>	Total Gate Charge (4.5V)	V <sub>DS</sub> =16V , V <sub>GS</sub> =4.5V , I <sub>D</sub> =10A	---	23	---	nC
Q <sub>gs</sub>	Gate-Source Charge		---	3.5	---	
Q <sub>gd</sub>	Gate-Drain Charge		---	8.4	---	
T <sub>d(on)</sub>	Turn-On Delay Time	V <sub>DD</sub> =16V , V <sub>GS</sub> =4.5V , R <sub>G</sub> =6 I <sub>D</sub> =5.5A	---	10.2	---	ns
T <sub>r</sub>	Rise Time		---	41	---	
T <sub>d(off)</sub>	Turn-Off Delay Time		---	67	---	
T <sub>f</sub>	Fall Time		---	31	---	
C <sub>iss</sub>	Input Capacitance	V <sub>DS</sub> =10V , V <sub>GS</sub> =0V , f=1MHz	---	1767	---	pF
C <sub>oss</sub>	Output Capacitance		---	184	---	
C <sub>rss</sub>	Reverse Transfer Capacitance		---	155	---	
I <sub>s</sub>	Continuous Source Current <sup>1</sup>	V <sub>G</sub> =V <sub>D</sub> =0V , Force Current	---	---	11	A
I <sub>SM</sub>	Pulsed Source Current <sup>2</sup>		---	---	70	A
V <sub>SD</sub>	Diode Forward Voltage <sup>2</sup>	V <sub>GS</sub> =0V , I <sub>S</sub> =11A , T <sub>J</sub> =25°C	---	---	1.2	V

Note :

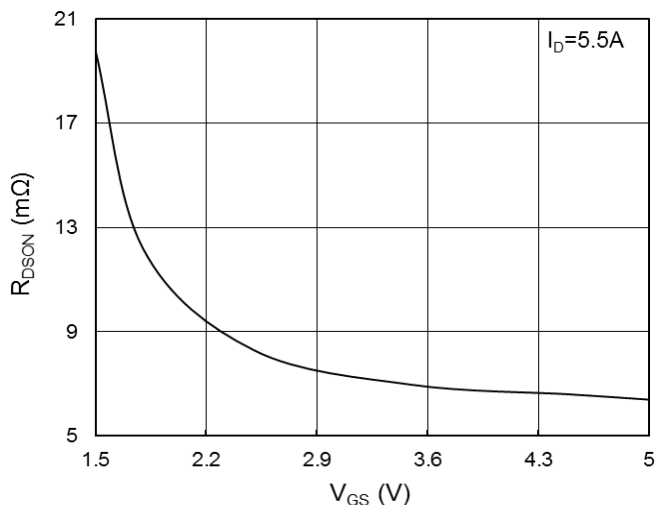
1 .The data tested by surface mounted on a 1 inch<sup>2</sup>FR-4 board with 2OZ copper, t ≤10s.

2.The data tested by pulsed , pulse width ≤ 10us , duty cycle ≤ 1%

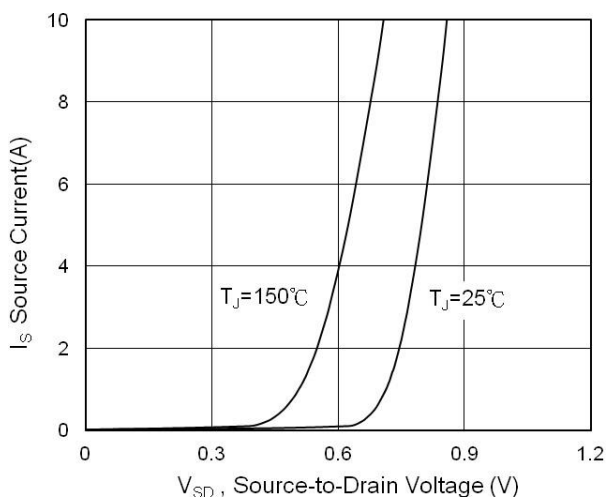
**Typical Characteristics**



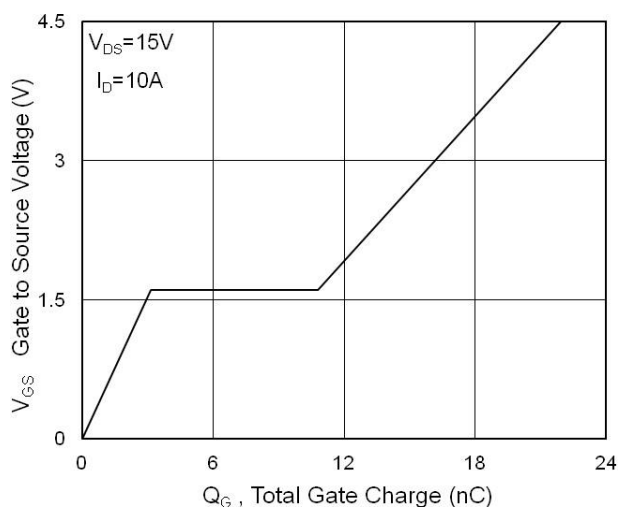
**Fig.1 Typical Output Characteristics**



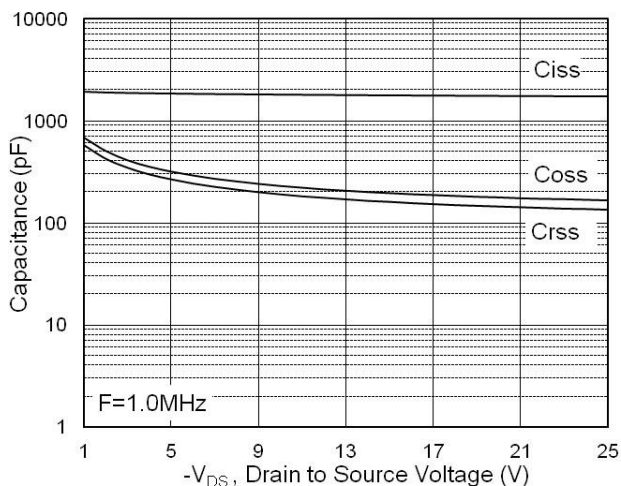
**Fig.2 OResistance vs Gate Source**



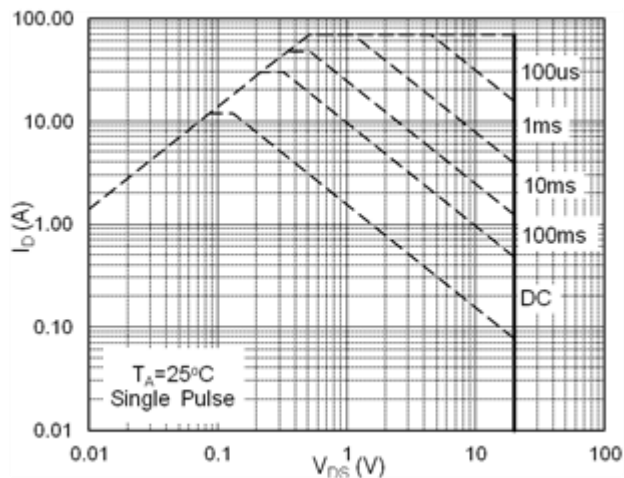
**Fig.3 Forward Characteristics of Reverse**



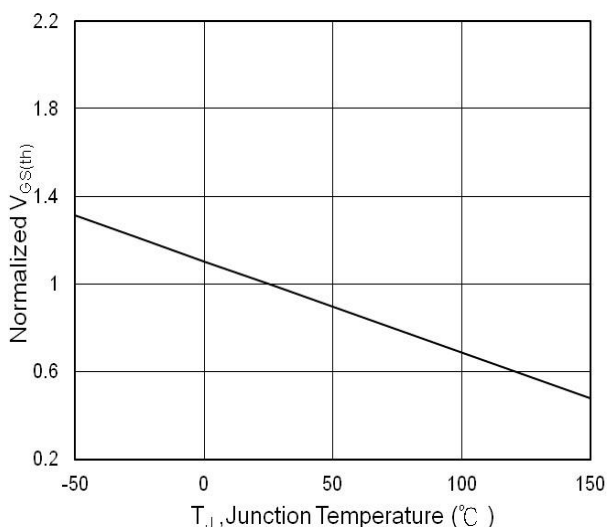
**Fig.4 Gate-Charge Characteristics**



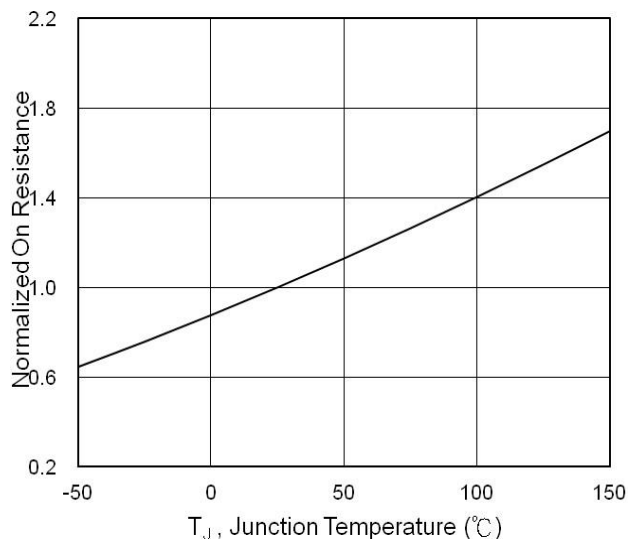
**Fig.5  $V_{GS(th)}$  vs.  $T_J$**



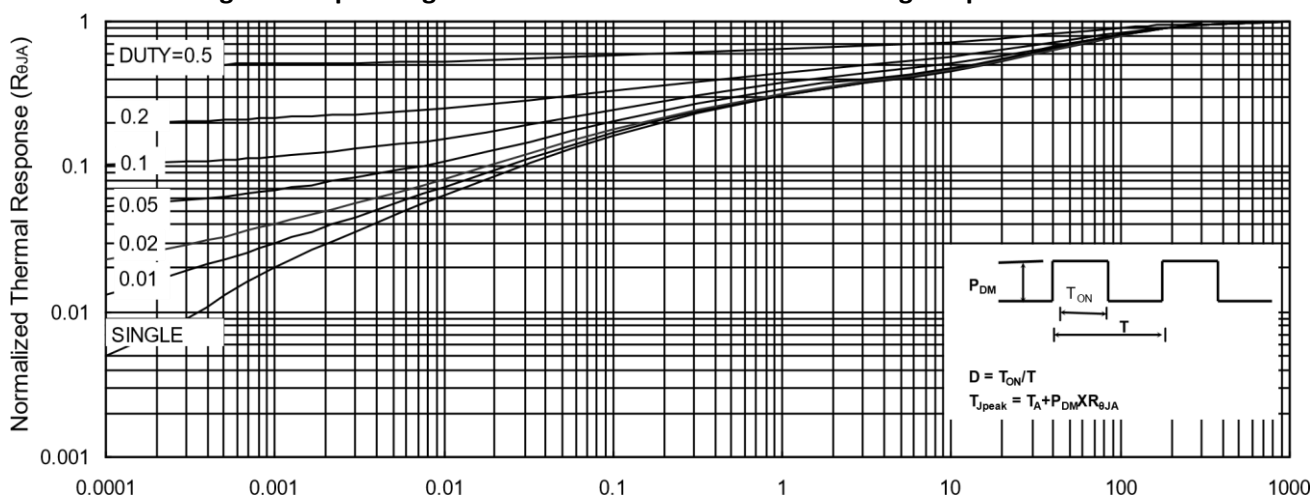
**Fig.6 Normalized  $R_{DS(on)}$  vs.  $T_J$**



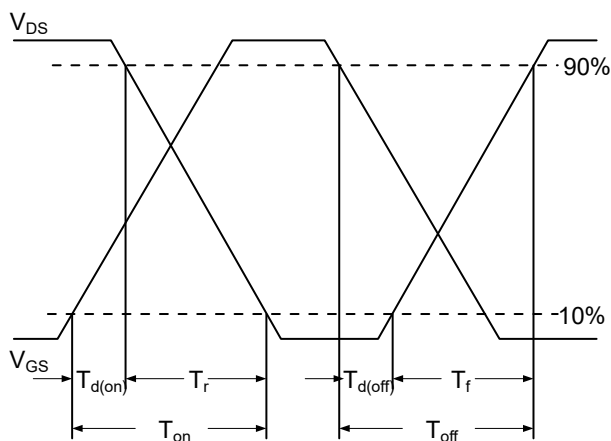
**Fig.8 Safe Operating Area**



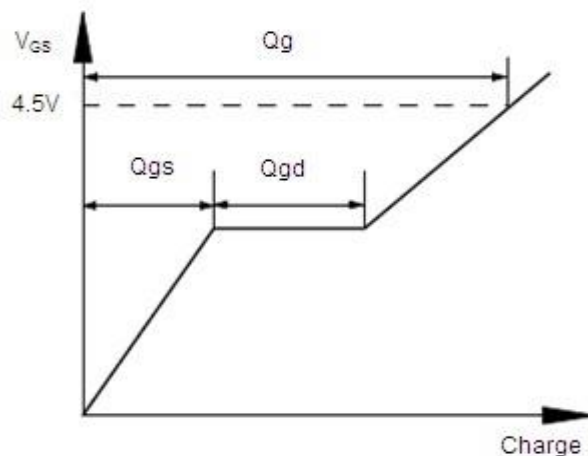
**Fig.7 Capacitance**



**Fig.9 Normalized Maximum Transient Thermal Impedance**

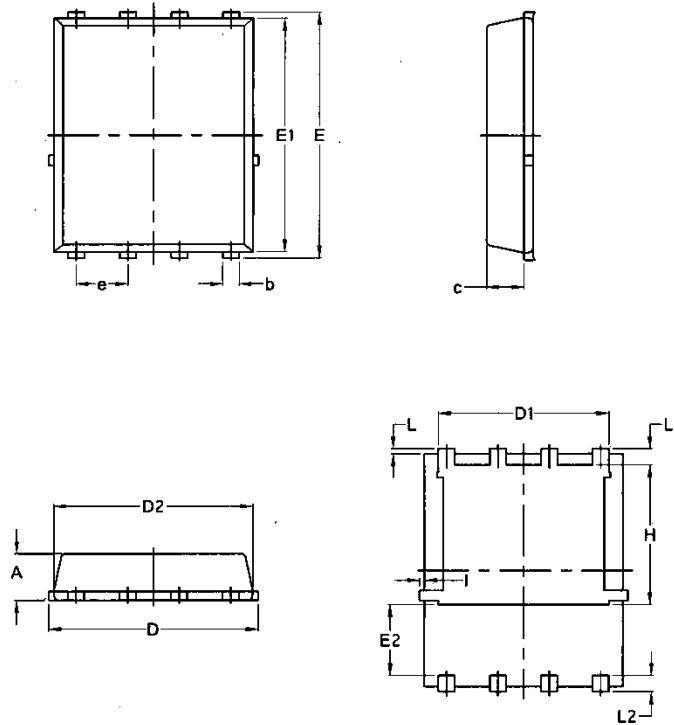


**Fig.10 Switching Time Waveform**



**Fig.11 Gate Charge Waveform**

**Package Mechanical Data-DFN5\*6-8L-JQ Single**



Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070