

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	1.2mΩ@10V	120A
	1.6mΩ@4.5V	

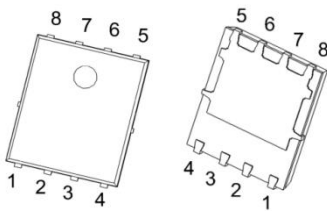
Feature

- Fast Switching
- Low Gate Charge and R_{ds(on)}
- 100% Single Pulse avalanche energy Test

Applications

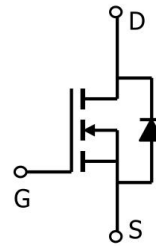
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package

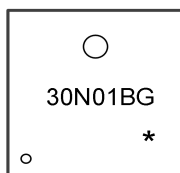


PDFN5X6-8L

Circuit diagram



Marking



30N01BG =Device Code
* =Month Code

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹ (T _c =25°C, Package Limit)	I_D	120	A
Continuous Drain Current ¹ (T _c =25°C, Silicon Limit)	I_D	185	A
Pulsed Drain Current ²	I_{DM}	480	A
Single Pulse Avalanche Energy ³	E_{AS}	552	mJ
Total Power Dissipation ⁴ (T _c =25°C)	P_D	86	W
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	1.45	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

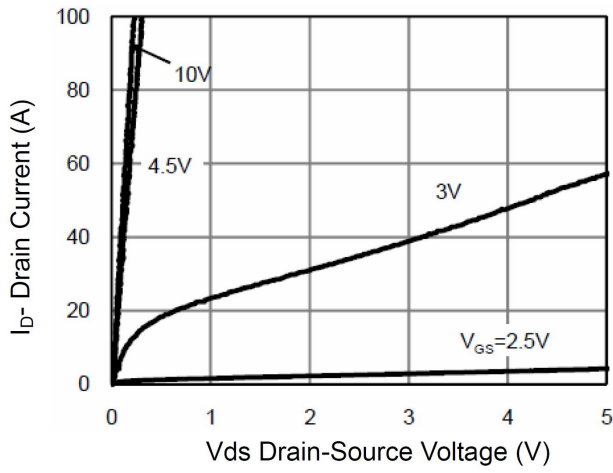
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V, T_J=25^\circ C$	---	---	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	1	1.5	2.5	V
Static Drain-Source On-Resistance ²	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	---	1.2	1.5	m Ω
		$V_{GS}=4.5V, I_D=15A$	---	1.6	2.2	
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=25V, V_{GS}=0V, f=1MHz$	---	4625	---	pF
Output Capacitance	C_{oss}		---	963	---	
Reverse Transfer Capacitance	C_{rss}		---	42	---	
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS}=25V, V_{GS}=10V, I_D=20A$	---	95	---	nC
Gate-Source Charge	Q_{gs}		---	18	---	
Gate-Drain Charge	Q_{gd}		---	17.8	---	
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=15V, V_{GS}=10V, R_G=10\Omega, I_D=20A$	---	13	---	ns
Rise Time	T_r		---	8	---	
Turn-Off Delay Time	$T_{d(off)}$		---	50	---	
Fall Time	T_f		---	9	---	
Diode Characteristics						
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=20A, T_J=25^\circ C$	---	---	1.2	V

Note :

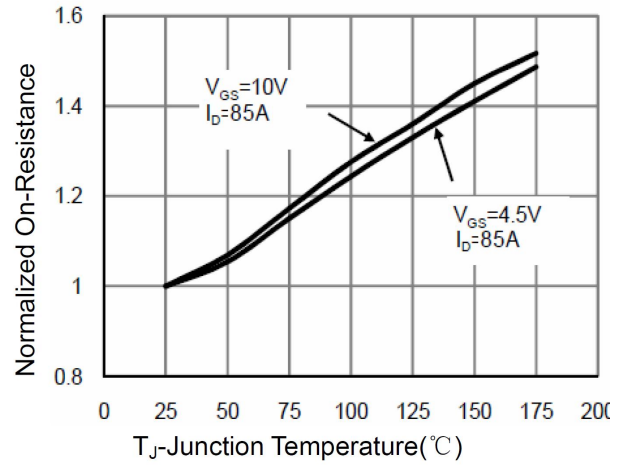
- The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- The EAS data shows Max. rating . The test condition is $V_{DD}=15V, V_{GS}=10V, L=0.5mH, R_G=25\Omega$



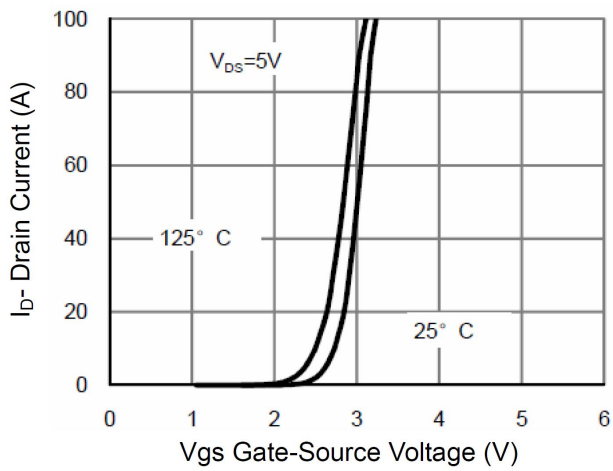
Typical Characteristics



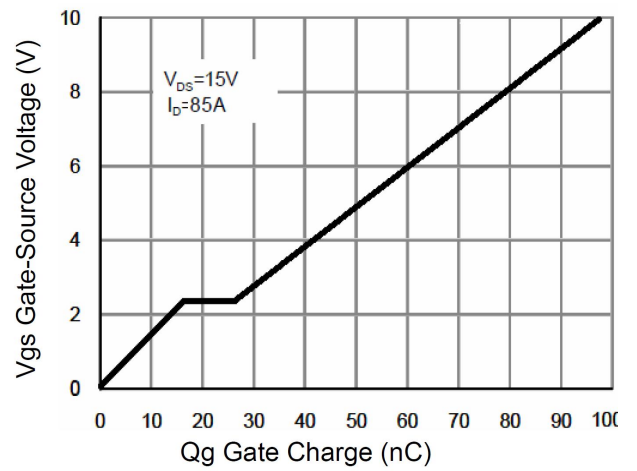
Output Characteristics



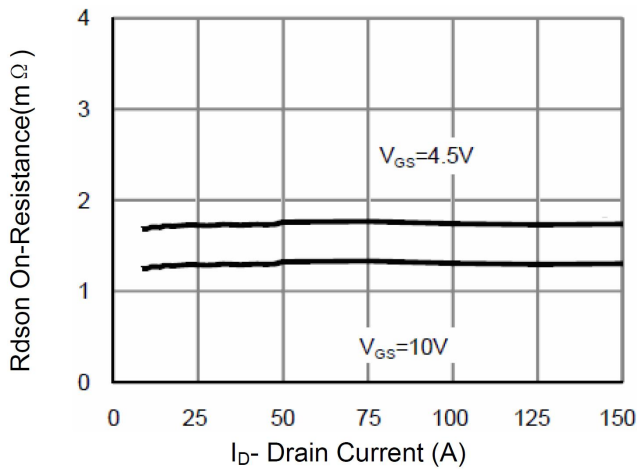
R_{dson} -Junction Temperature



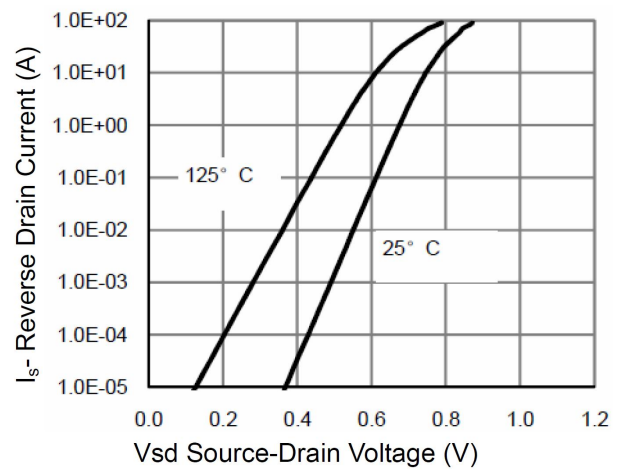
Transfer Characteristics



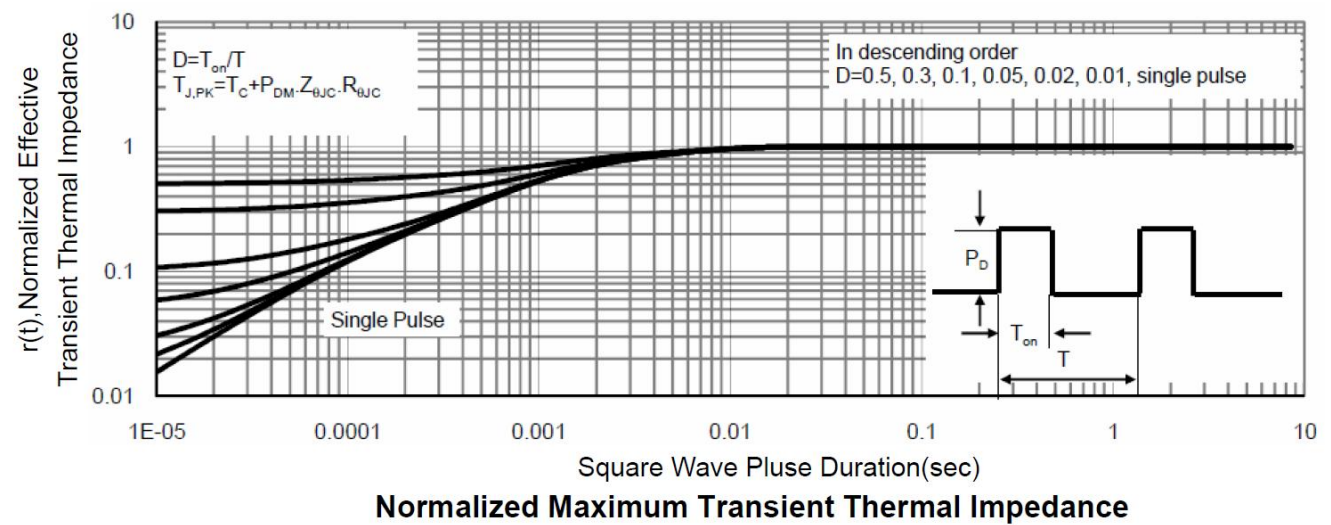
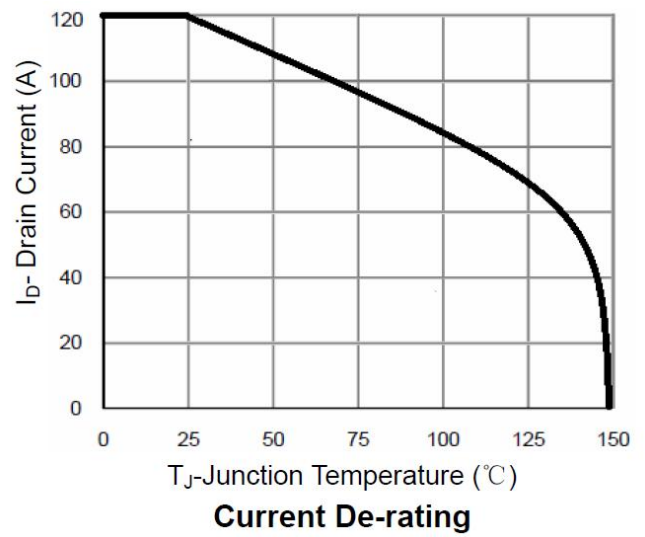
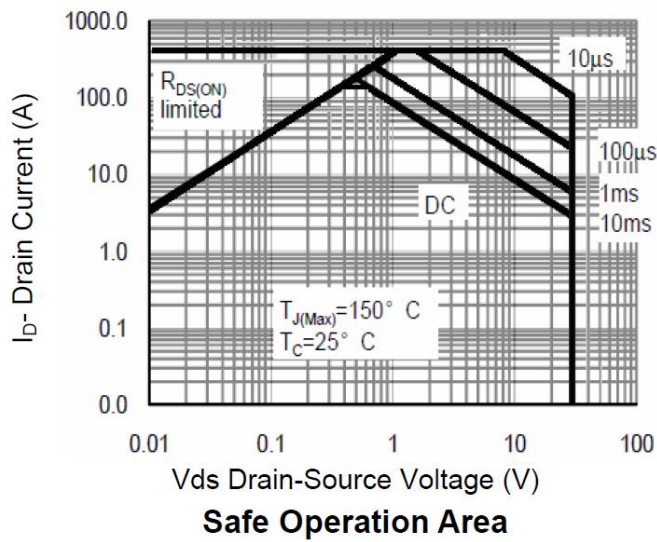
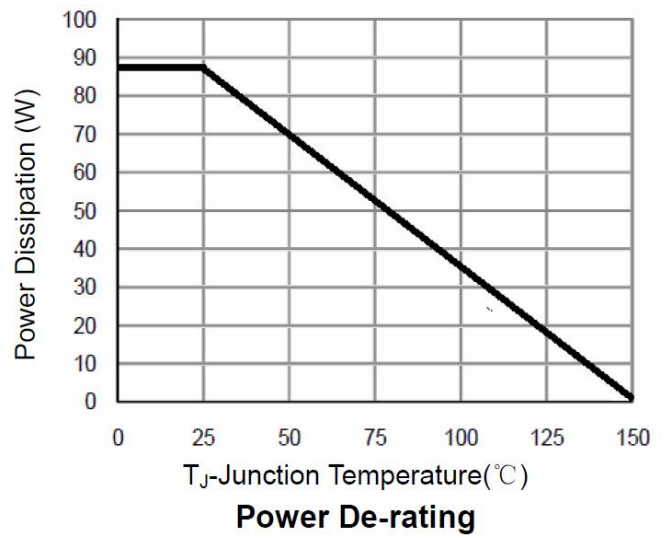
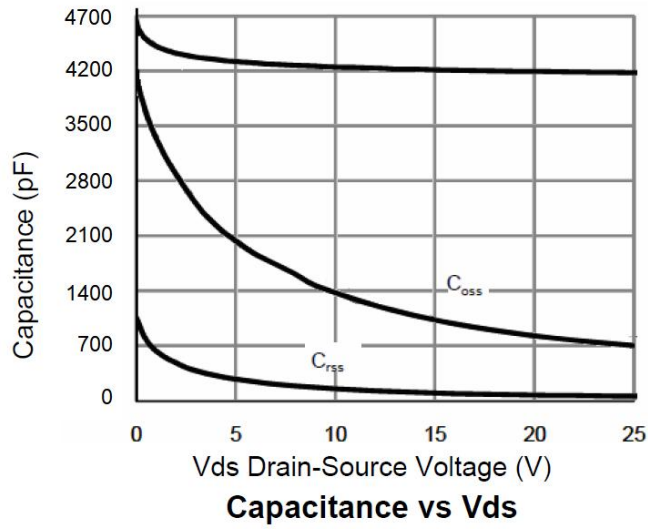
Gate Charge



R_{dson} - Drain Current

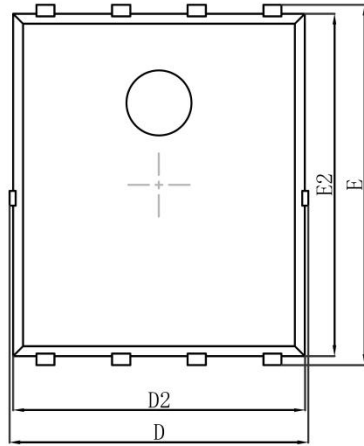


Source- Drain Diode Forward

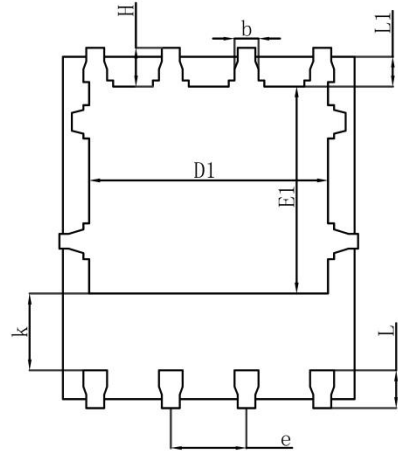




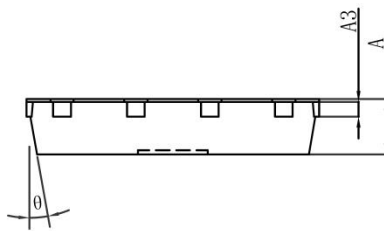
PDFN5X6-8L Package Information



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	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°



制 修 订 记 录

文件版本	制修日期	修订页次	修订人	变更内容	
1.0	2023/9/8		覃源	规格书建立	
批准		审核		编制	
日期		日期		日期	

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [Siliup](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [IRFY240C](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#)
[DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#)
[DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#)
[DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#) [IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-](#)
[TP](#) [MCQ7328-TP](#) [NTMC083NP10M5L](#) [NVMFS2D3P04M8LT1G](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#) [WMJ80N60C4](#) [BXP2N20L](#)
[BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTCR](#) [DMNH15H110SK3-13](#)