

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	7.5mΩ@10V	35A
	10.5mΩ@4.5V	

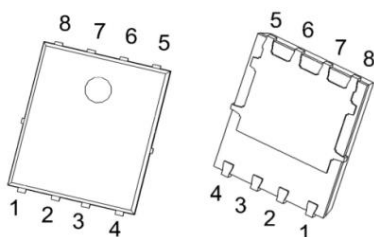
Feature

- High Power and current handing capability
- Lead free product is acquired
- Surface Mount Package

Application

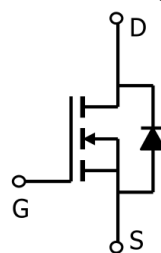
- PWM applications
- Load switch
- Power management

Package

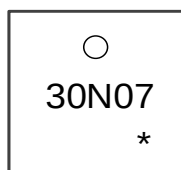


PDFN5X6-8L

Circuit diagram



Marking



30N07 : Product code
* : Month code.

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage ($V_{GS}=0V$)	V_{DS}	30	V
Gate-Source Voltage ($V_{DS}=0V$)	V_{GS}	± 20	V
Drain Current-Continuous ($T_c=25^\circ C$) ⁽¹⁾	I_D	35	A
Drain Current-Continuous@ Current-Pulsed ⁽²⁾	$I_{DM} (pluse)$	140	A
Maximum Power Dissipation ($T_c=25^\circ C$)	P_D	45	W
Avalanche energy ⁽³⁾	E_{AS}	90	mJ
Thermal Resistance, Junction-to-Case	$R_{\theta Jc}$	2.78	$^\circ C/W$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 175	$^\circ C$

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

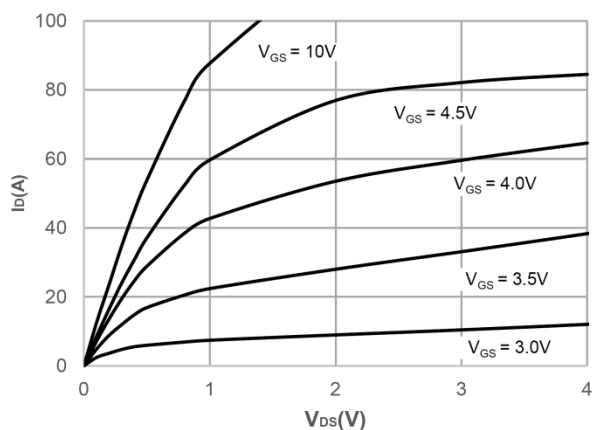
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.5	V
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =20A	10	20	-	S
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =20A	-	7.5	10	mΩ
		V _{GS} =4.5V, I _D =15A	-	10.5	15	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz	-	1050	-	pF
Output Capacitance	C _{oss}		-	145	-	pF
Reverse Transfer Capacitance	C _{rss}		-	120	-	pF
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1.0MHz	-	2	-	Ω
Switching Times						
Turn-on Delay Time	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =0.75W, R _{GEN} =3W	-	7	-	nS
Turn-on Rise Time	t _r		-	22	-	nS
Turn-Off Delay Time	t _{d(off)}		-	30	-	nS
Turn-Off Fall Time	t _f		-	5	-	nS
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =25V, I _D =12A	-	22	-	nC
Gate-Source Charge	Q _{gs}		-	4	-	nC
Gate-Drain Charge	Q _{gd}		-	7	-	nC
Source-Drain Diode Characteristics						
Gate-Drain Charge	V _{SD}	V _{GS} =0V, I _S =20A	-	-	1.2	V

Notes:

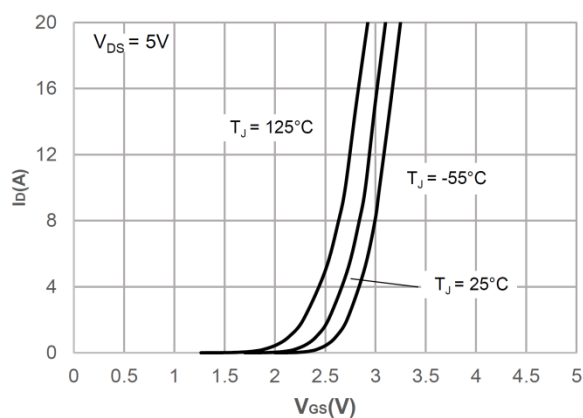
- The maximum current rating is package limited
- Repetitive Rating: Pulse width limited by maximum junction
- EAS condition: $T_J=25^\circ C, V_{DD}=30V, V_g=10V, R_g=25\Omega$



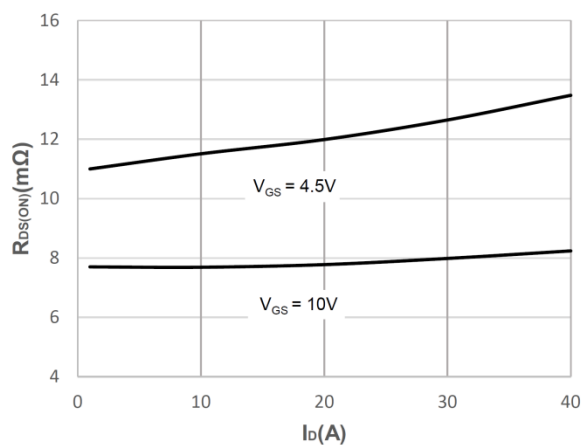
Typical Characteristics



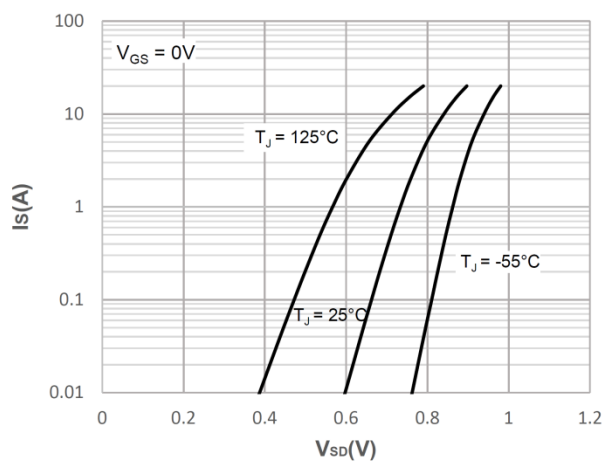
Output Characteristics



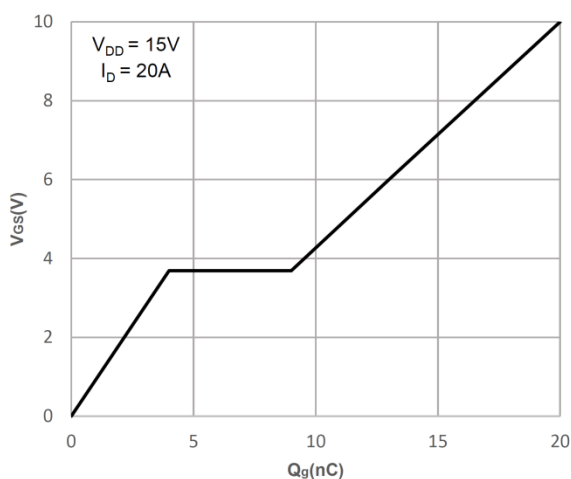
Typical Transfer Characteristics



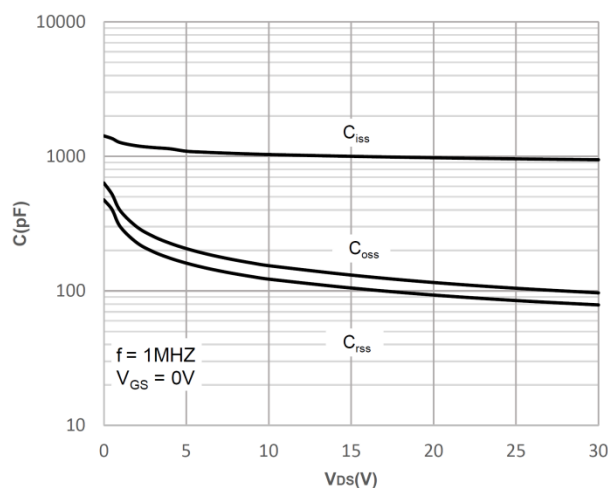
On-resistance vs. Drain Current



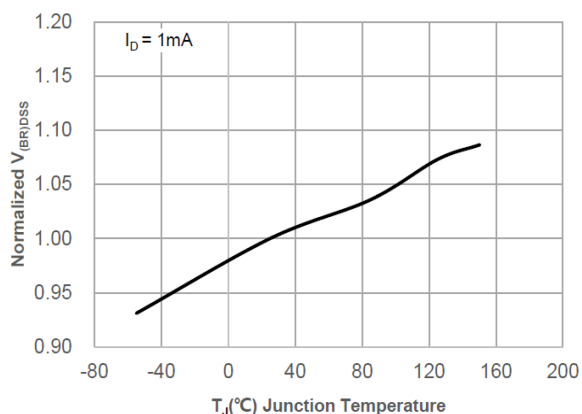
Body Diode Characteristics



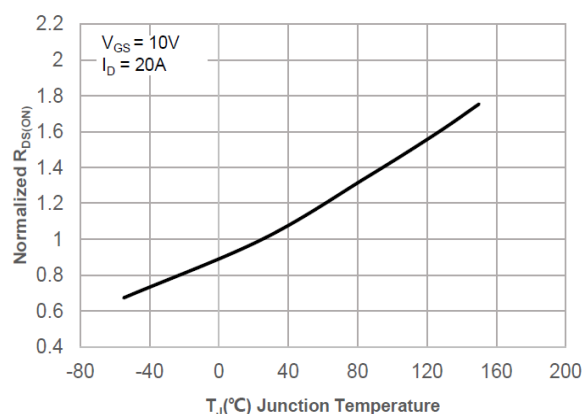
Gate Charge Characteristics



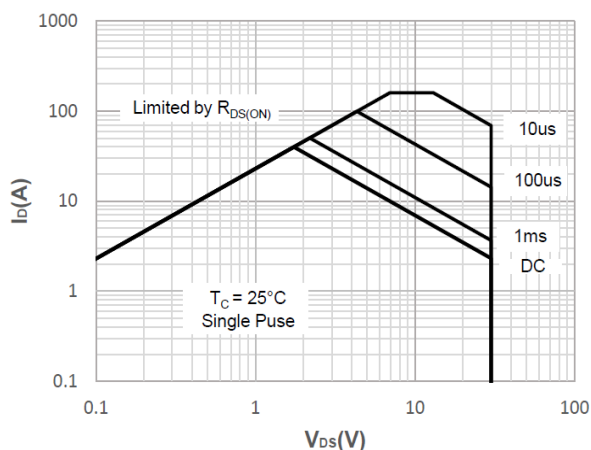
Capacitance Characteristics



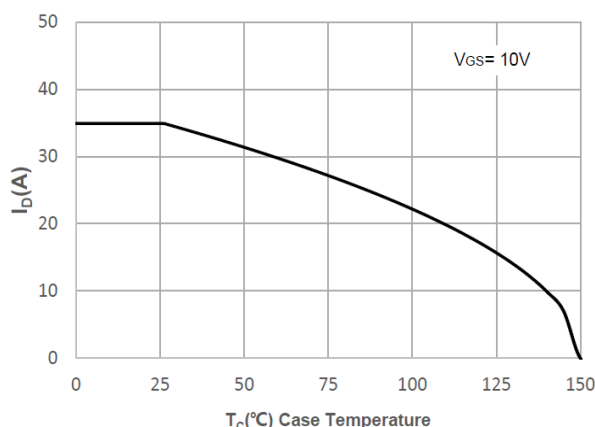
Normalized Breakdown voltage vs. Junction Temperature



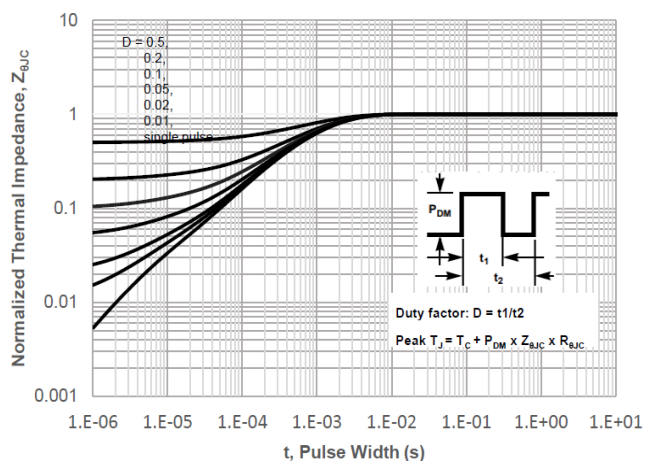
Normalized on Resistance vs. Junction Temperature



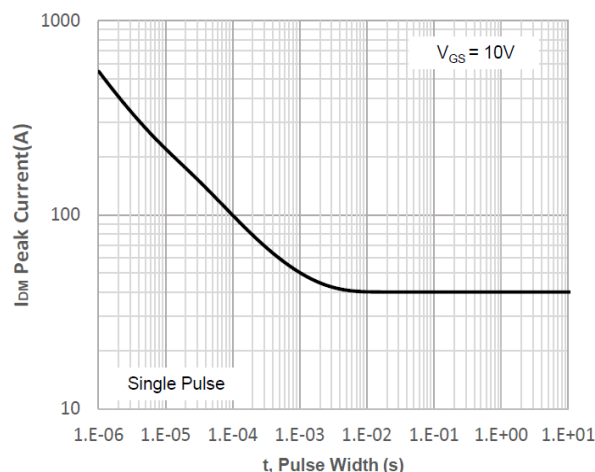
Maximum Safe Operating Area



Maximum Continuous Drain Current vs. Case Temperature



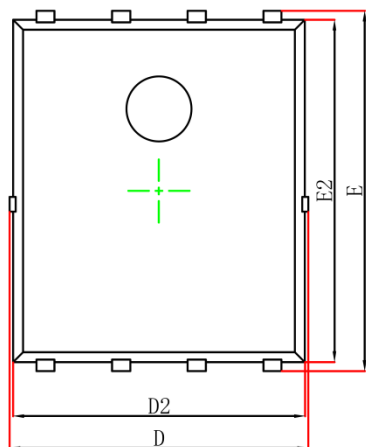
Normalized Maximum Transient Thermal Impedance



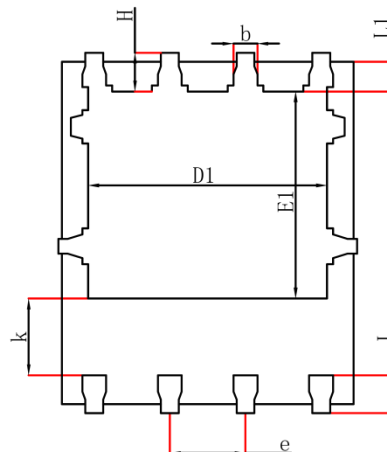
Peak Current Capacity



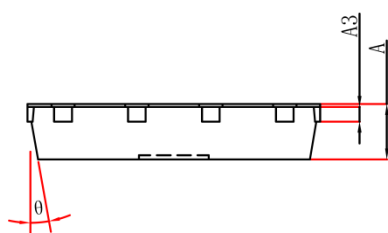
PDFN5X6-8L Package Information



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°