

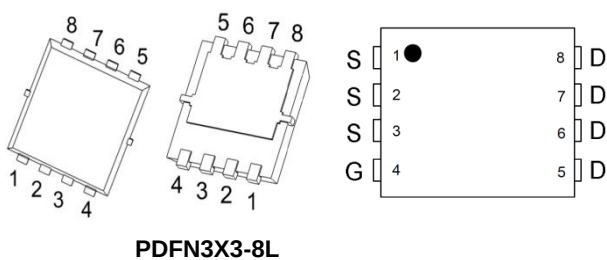
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	7.5mΩ@10V	26A
	10.5mΩ@4.5V	

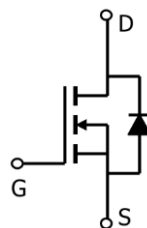
Feature

- Enhancement mode
- Low on-resistance $R_{DS(on)}$
- Pb-free lead plating; RoHS compliant

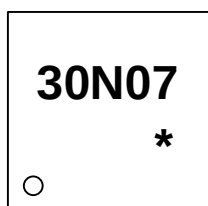
Package



Circuit diagram



Marking



30N07 =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	I_D	26	A
Pulsed Drain Current	I_{DM}	104	A
Single Pulse Avalanche Energy ¹	E_{AS}	58	mJ
Total Power Dissipation	P_D	21	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	5.9	°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)

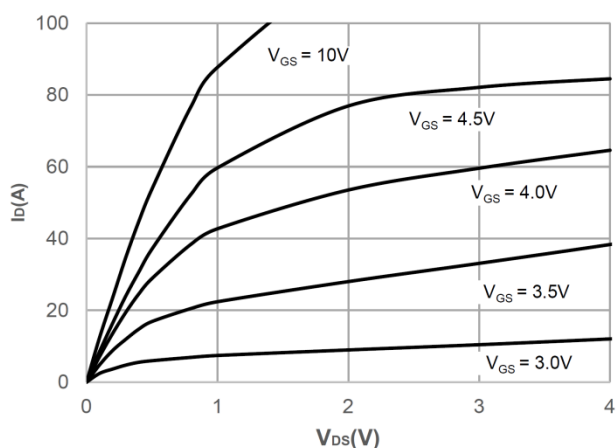
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250μA	30	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.7	2.5	V
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =10A	-	7.5	10	mΩ
		V _{GS} =4.5V, I _D =6A	-	10.5	15	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1.0MHz	-	1217	-	pF
Output Capacitance	C _{oss}		-	153	-	pF
Reverse Transfer Capacitance	C _{rss}		-	121	-	pF
Switching Times						
Turn-on Delay Time	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, I _D =10A, R _{GEN} =3.3Ω	-	6.2	-	nS
Turn-on Rise Time	t _r		-	59	-	nS
Turn-Off Delay Time	t _{d(off)}		-	27.6	-	nS
Turn-Off Fall Time	t _f		-	8.4	-	nS
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =25V, I _D =12A	-	12.6	-	nC
Gate-Source Charge	Q _{gs}		-	4.2	-	nC
Gate-Drain Charge	Q _{gd}		-	5.1	-	nC
Source-Drain Diode Characteristics						
Gate-Drain Charge	V _{SD}	V _{GS} =0V, I _S =1A	-	-	1.2	V

Note:

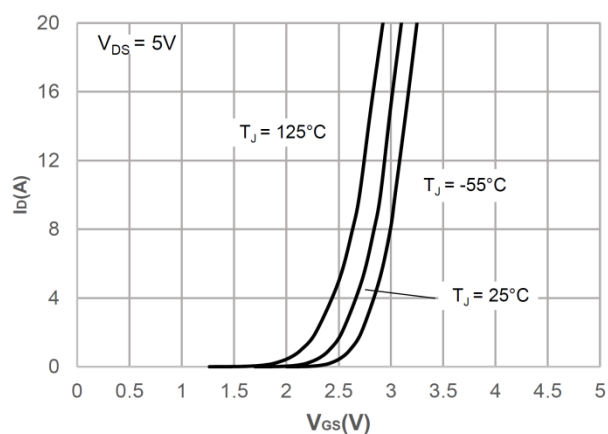
1. $T_J=25^\circ C, V_{DD}=20V, V_G=10V, L=0.5mH, R_g=25\Omega$



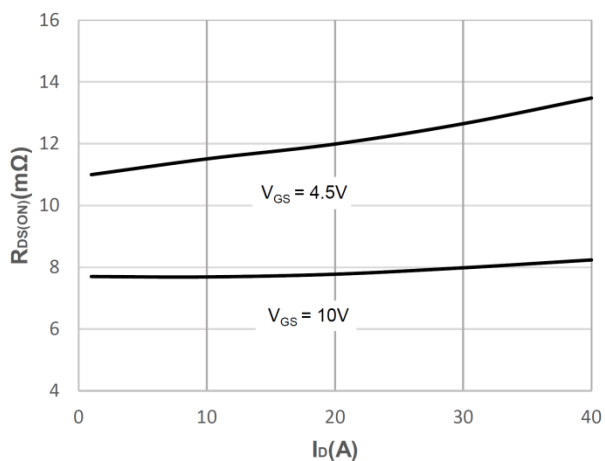
Typical Characteristics



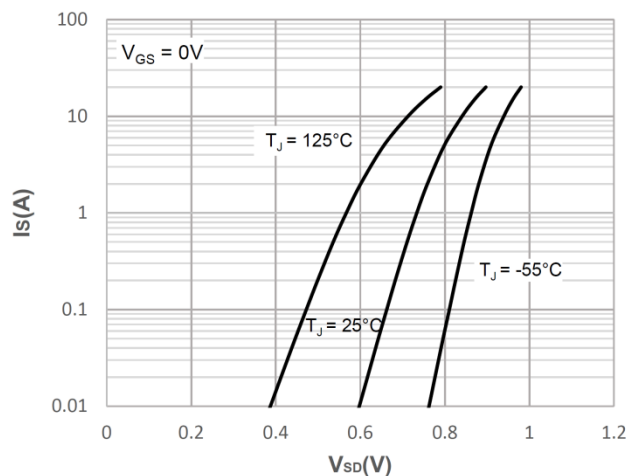
Output Characteristics



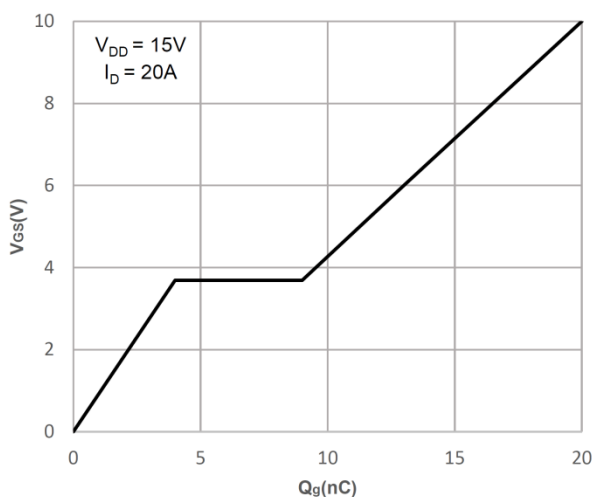
Typical Transfer Characteristics



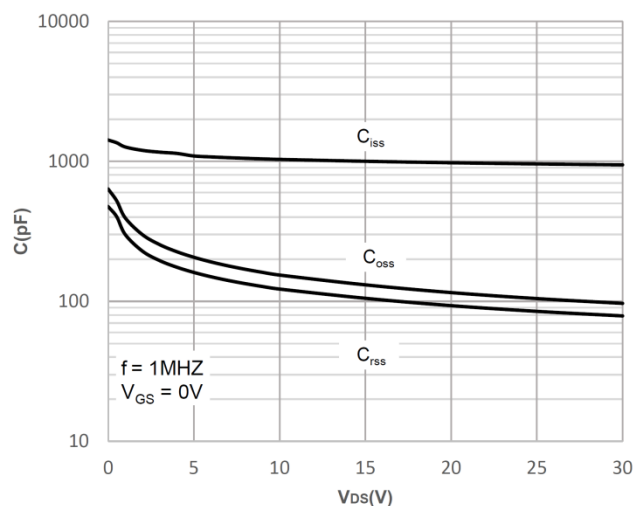
On-resistance vs. Drain Current



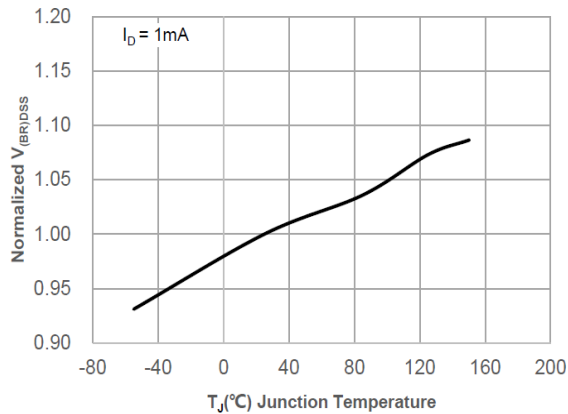
Body Diode Characteristics



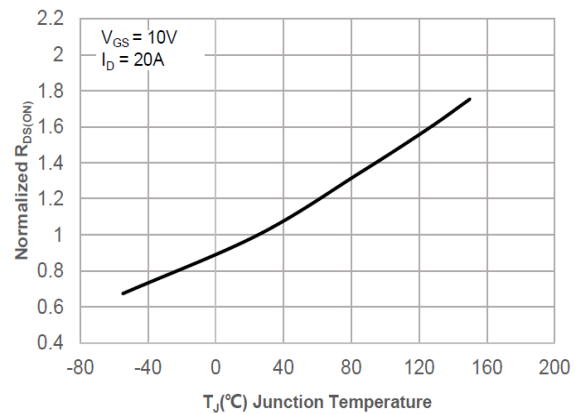
Gate Charge Characteristics



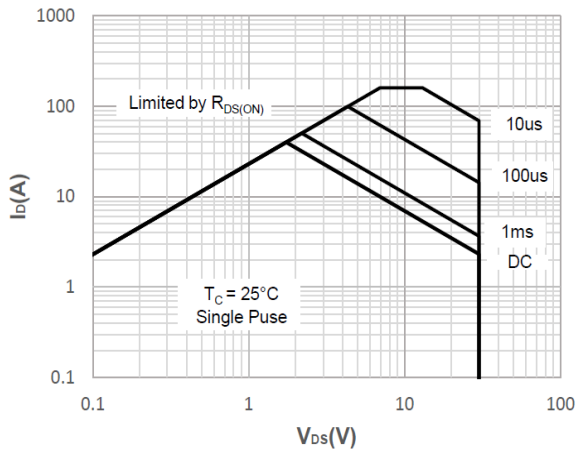
Capacitance Characteristics



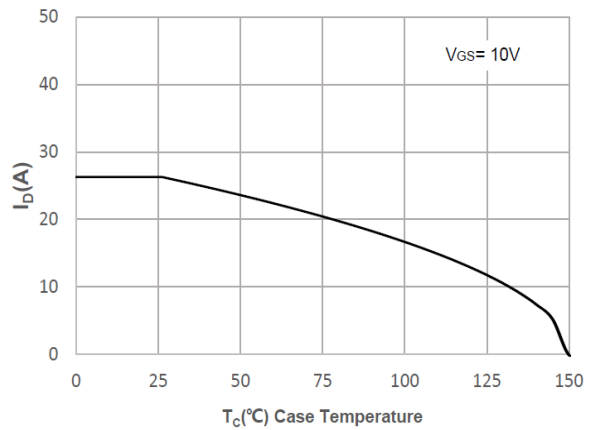
Normalized Breakdown voltage vs. Junction Temperature



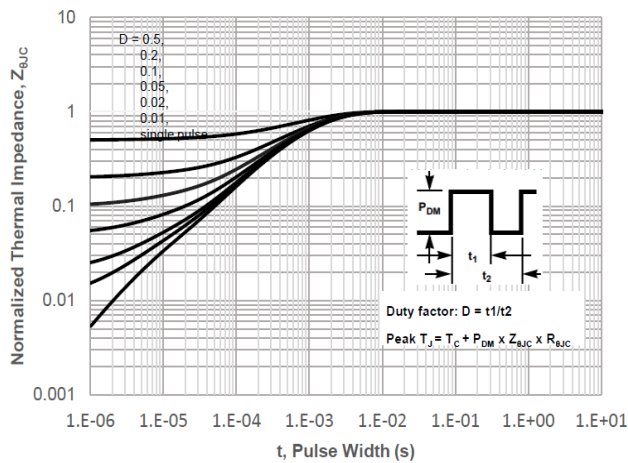
Normalized on Resistance vs. Junction Temperature



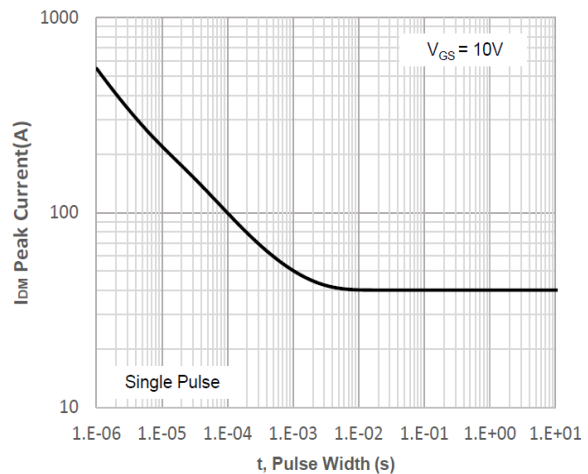
Maximum Safe Operating Area



Maximum Continuous Drain Current vs. Case Temperature



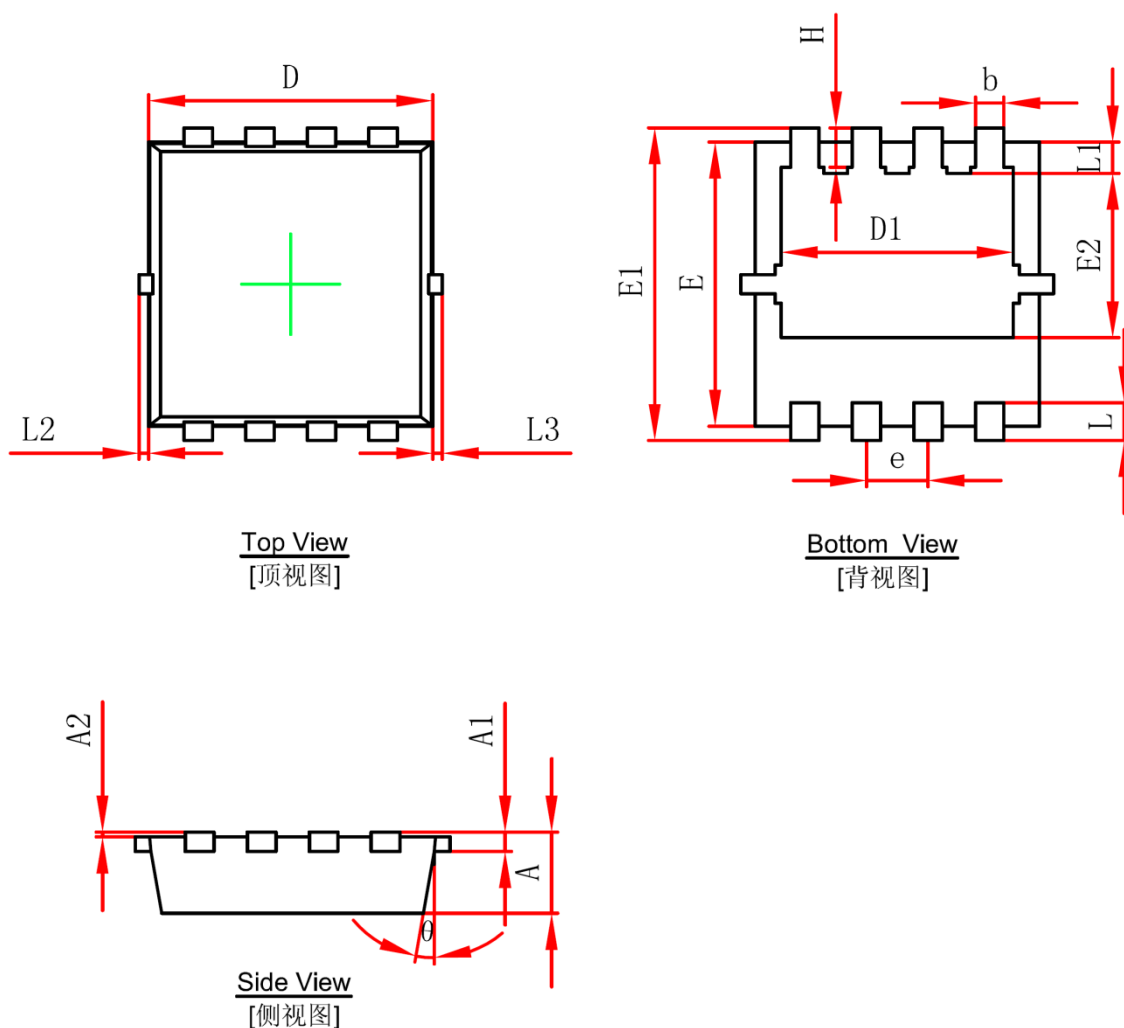
Normalized Maximum Transient Thermal Impedance



Peak Current Capacity



PDFN3X3-8L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.650	0.850	0.026	0.033
A1	0.152 REF.		0.006 REF.	
A2	0~0.05		0~0.002	
D	2.900	3.100	0.114	0.122
D1	2.300	2.600	0.091	0.102
E	2.900	3.100	0.114	0.122
E1	3.150	3.450	0.124	0.136
E2	1.535	1.935	0.060	0.076
b	0.200	0.400	0.008	0.016
e	0.550	0.750	0.022	0.030
L	0.300	0.500	0.012	0.020
L1	0.180	0.480	0.007	0.019
L2	0~0.100		0~0.004	
L3	0~0.100		0~0.004	
H	0.315	0.515	0.012	0.020
θ	9°	13°	9°	13°