

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	25mΩ@-10V	-25A
	30mΩ@-4.5V	

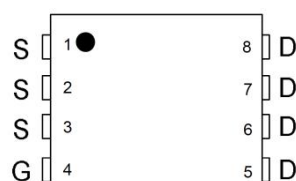
Feature

- Fast switching speed
- Surface mount package
- Reliable and Rugged
- ROHS Compliant & Halogen-Free

Applications

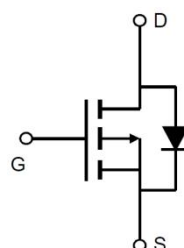
- DC-DC Converters.
- Motor Control.

Package

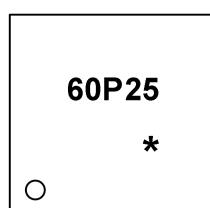


PDFN3X3-8L

Circuit diagram



Marking



60P25
*

=Device Code
=Month Code

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DSS}	-60	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current(Tc=25°C)	I _D	-25	A
Pulse Drain Current Tested	I _{DM}	-100	A
Maximum Power Dissipation(Tc=25°C)	P _D	37	W
Thermal Resistance-Junction to Case	R _{θJC}	3.38	°C/W
Maximum Junction Temperature	T _J	-55 to 150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Electrical Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V, ID= -250mA	-60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	VDS= -48V, VGS=0V	-	-	1	uA
Gate Leakage Current	I _{GSS}	VGS= ±20V, VDS=0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	VDS=VGS, ID= -250uA	-1.0	-1.7	-2.5	V
Drain-Source On-state Resistance	R _{DS(ON)}	VGS= -10V, ID= -5A	-	25	35	mΩ
		VGS= -4.5V, ID= -4A	-	30	42	
Dynamic and Switching Characteristics						
Input Capacitance	C _{iss}	VGS=0V, VDS= -30V, F=1MHz	-	2417	-	pF
Output Capacitance	C _{oss}		-	179	-	
Reverse Transfer Capacitance	C _{rss}		-	120	-	
Turn-on Delay Time	t _{d(ON)}	VDD= -30V, R _L = 4.7Ω, VGS= -10V, R _G =3Ω	-	9.8	-	nS
Turn-on Rise Time	t _r		-	6.1	-	
Turn-off Delay Time	t _{d(OFF)}		-	44	-	
Turn-off Fall Time	t _f		-	12.7	-	
Total Gate Charge	Q _g	VDS= -30V, VGS= -10V, ID= -6A	-	46.5	-	nC
Gate-Source Charge	Q _{gs}		-	9.1	-	
Gate-Drain Charge	Q _{gd}		-	9.2	-	
Source-Drain Characteristics						
Diode Forward Voltage	V _{SD}	IS= -1A, VGS=0V	-	-	1.2	V

Typical Characteristics

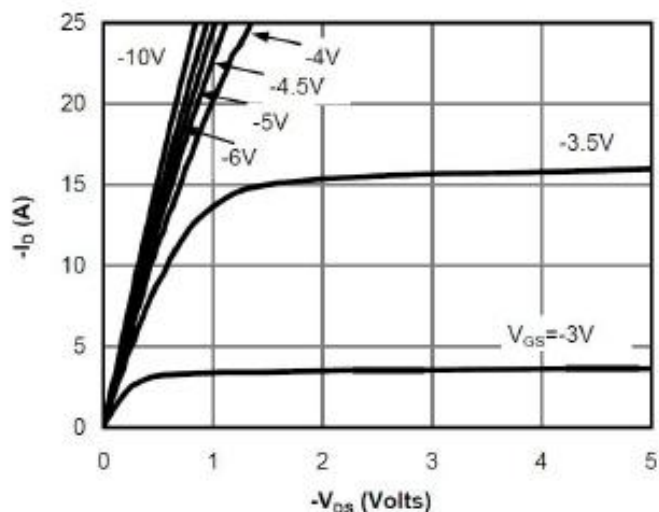


Fig 1: On-Region Characteristics

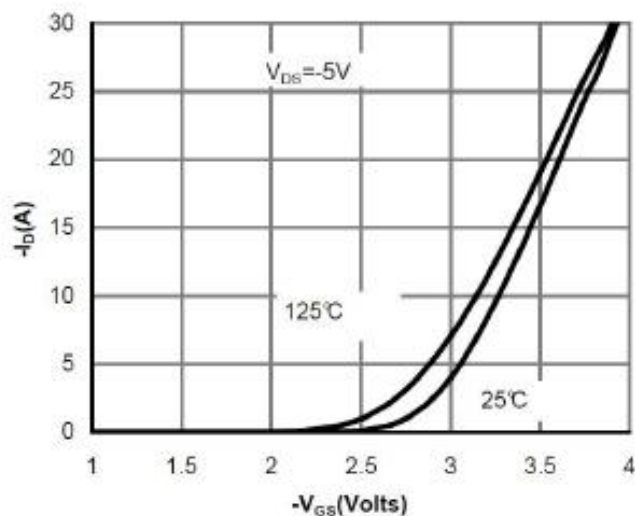


Figure 2: Transfer Characteristics

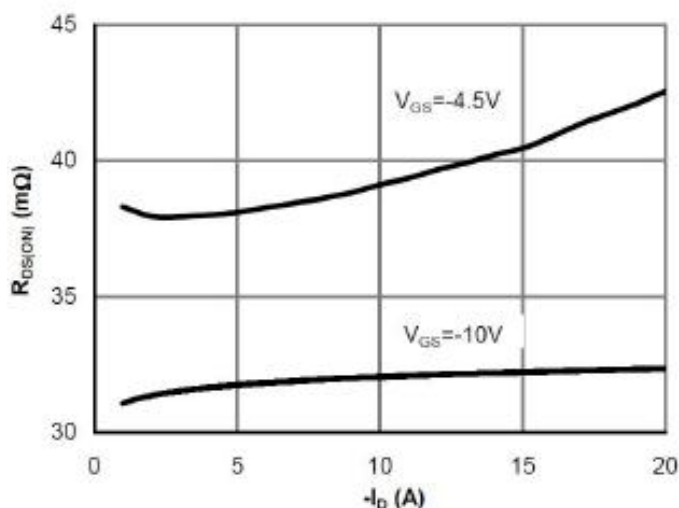


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

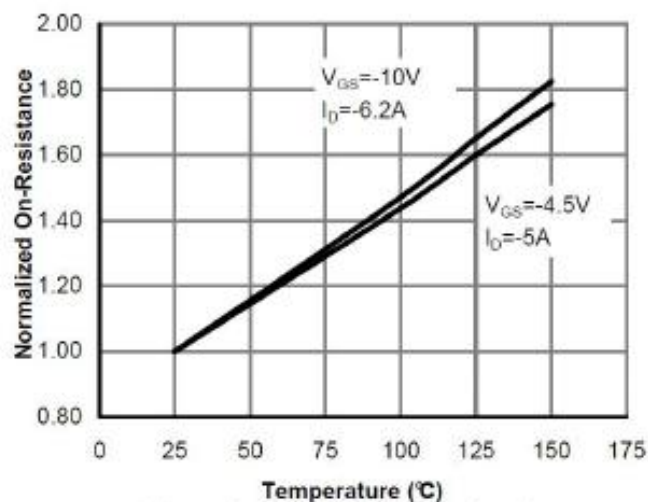


Figure 4: On-Resistance vs. Junction Temperature

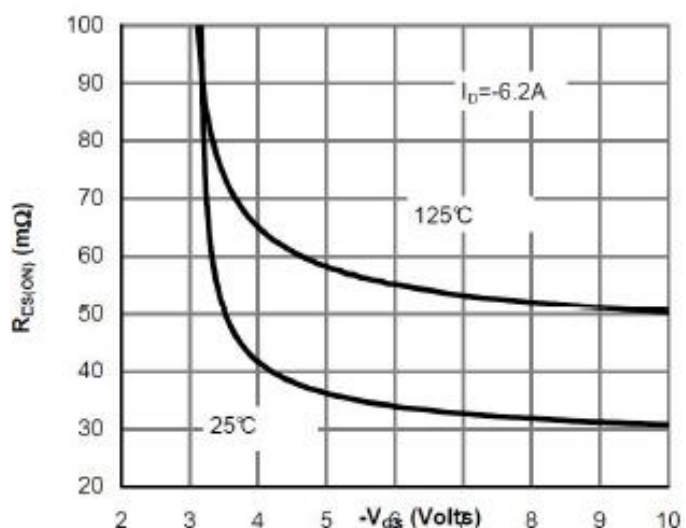


Figure 5: On-Resistance vs. Gate-Source Voltage

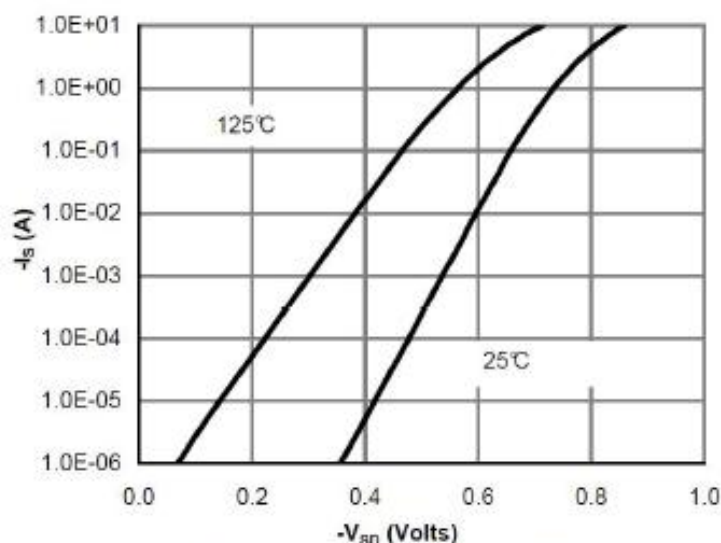


Figure 6: Body-Diode Characteristics

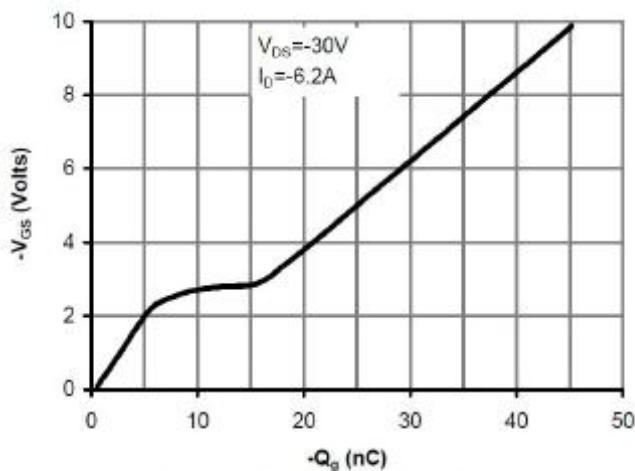


Figure 7: Gate-Charge Characteristics

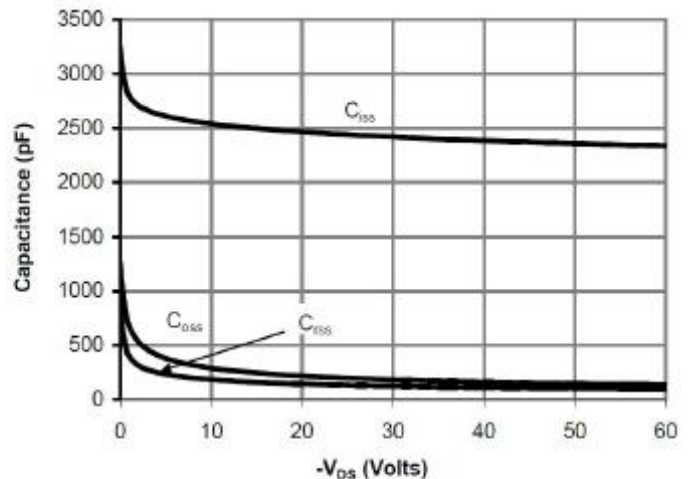


Figure 8: Capacitance Characteristics

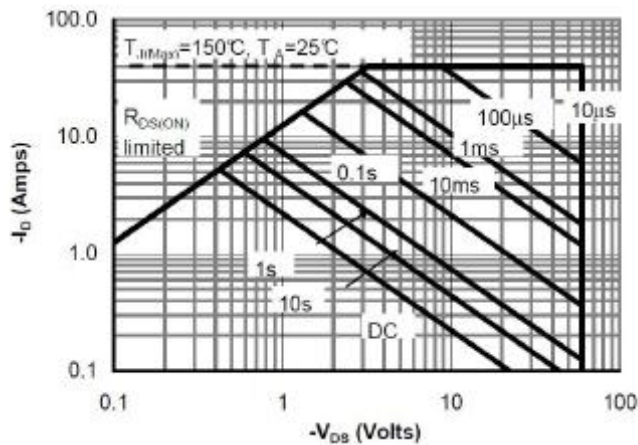


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

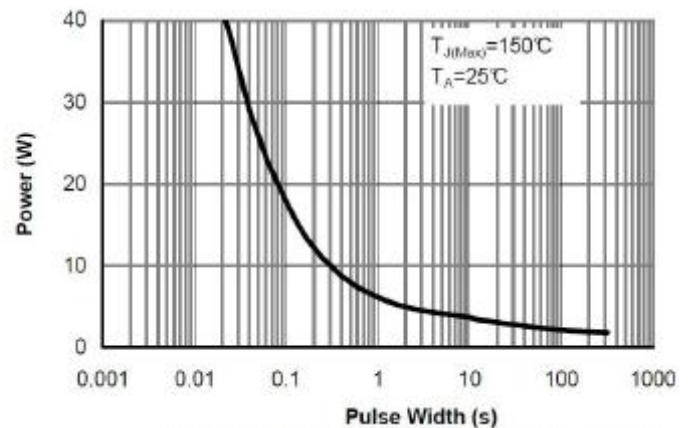


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

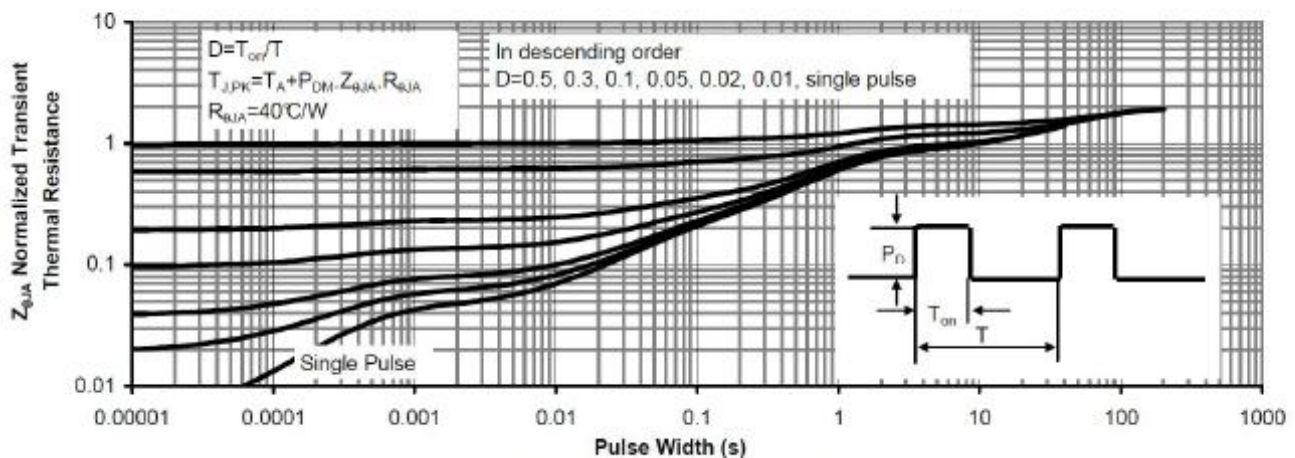
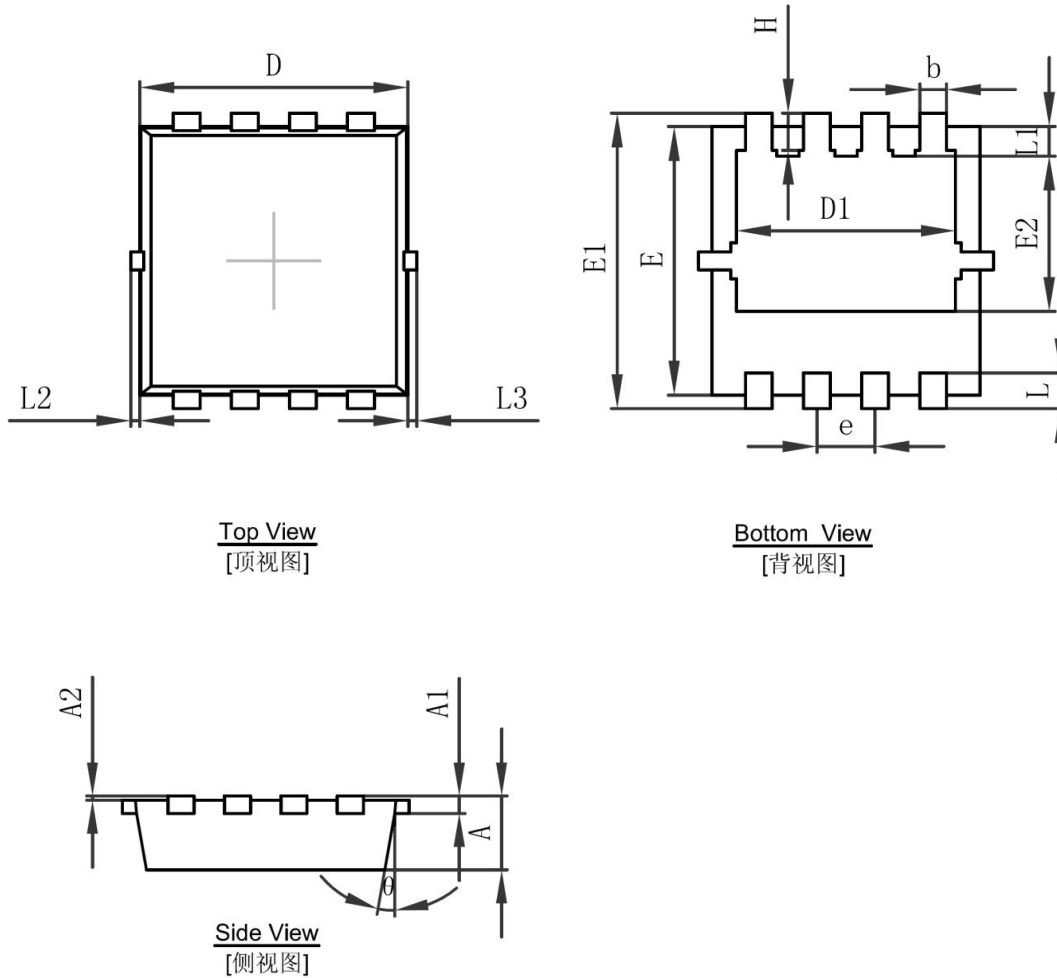


Figure 11: Normalized Maximum Transient Thermal Impedance

PDFNWB3.3×3.3-8L 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°

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