

Product Summary

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

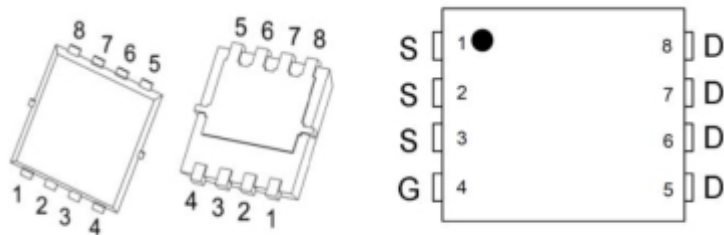
Feature

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

Application

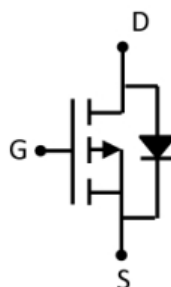
- DC-DC Converters.
- Motor Control.

Package

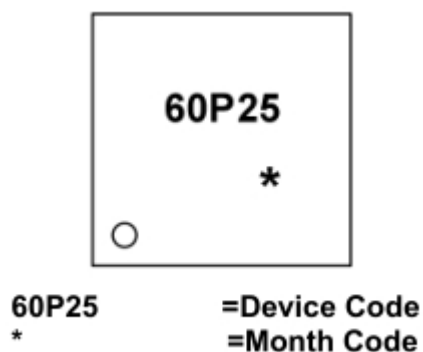


PDFNWB3.3×3.3-8L

Circuit diagram



Marking



Absolute maximum ratings

(T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-60	V
Gate-Source Voltage	V _{GS}	±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

(T_A=25°C, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV (BR) _{DSS}	V _{GS} = 0V, I _D = -250μA	-60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -48V, V _{GS} = 0V			-1	uA
Gate-Source Leakage	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	uA
Gate-Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-1	-1.7	-2.5	V
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = -10V, I _D = -5A		25	35	mΩ
		V _{GS} = -4.5V, I _D = -4A		30	42	
Dynamic and Switching Characteristics						
Input Capacitance	C _{iss}	V _{DS} = -30V, V _{GS} =0V, f=1MHz		2417		pF
Output Capacitance	C _{oss}			179		
Reverse Transfer Capacitance	C _{rss}			120		
Turn-on Delay Time	T _{d(on)}	V _{DD} = -30V, R _L =4.7Ω, V _{GEN} = -10V, R _{GEN} =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	V _{DS} = -30V, V _{GS} = -10V, I _D = -6A		46.5	55	nC
Gate-Source Charge	Q _{gs}			9.1		
Gate-Drain Charge	Q _{gd}			9.2		
Drain-Source Diode Characteristics						
Forward on voltage	V _{SD}	I _{SD} = -1A,V _{GS} =0V			-1.2	V

Typical Characteristics

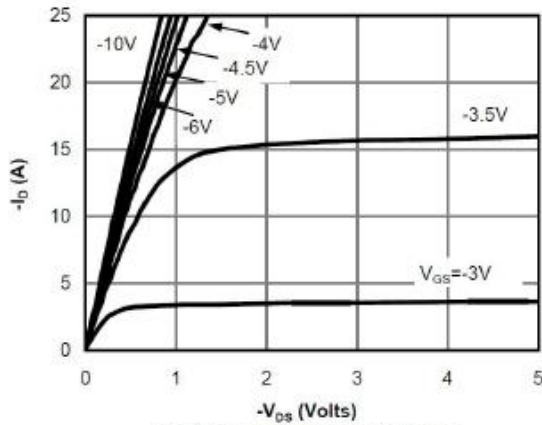


Fig 1: On-Region Characteristics

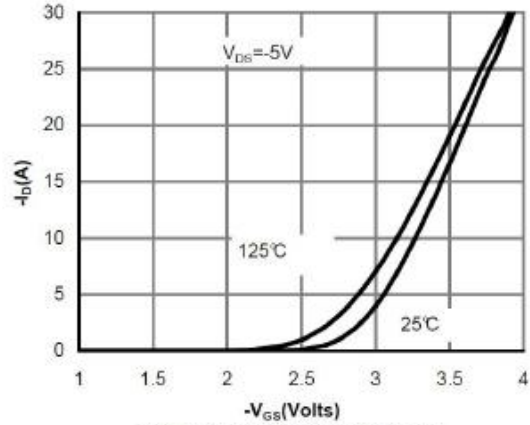


Figure 2: Transfer Characteristics

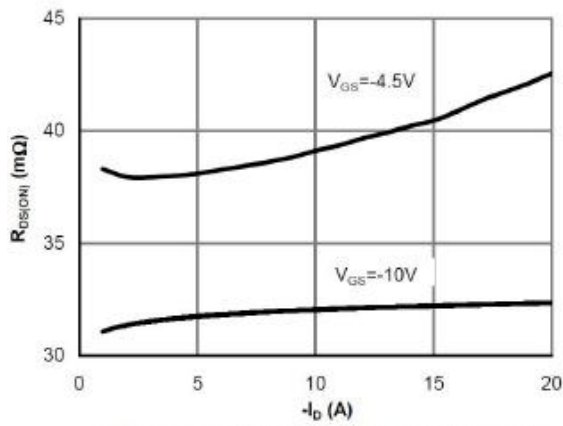


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

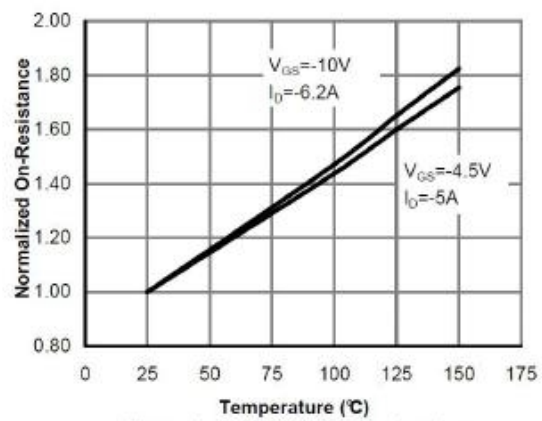


Figure 4: On-Resistance vs. Junction Temperature

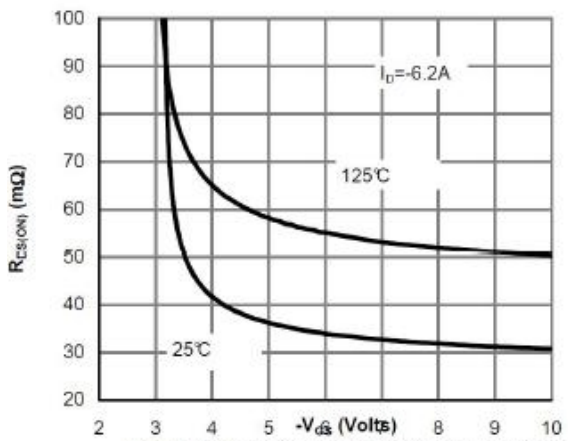


Figure 5: On-Resistance vs. Gate-Source Voltage

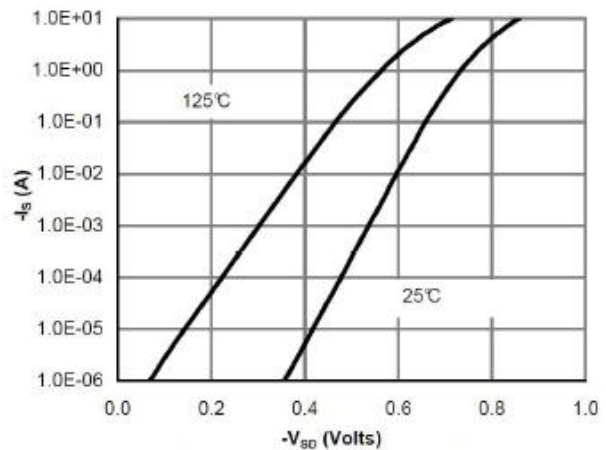


Figure 6: Body-Diode Characteristics

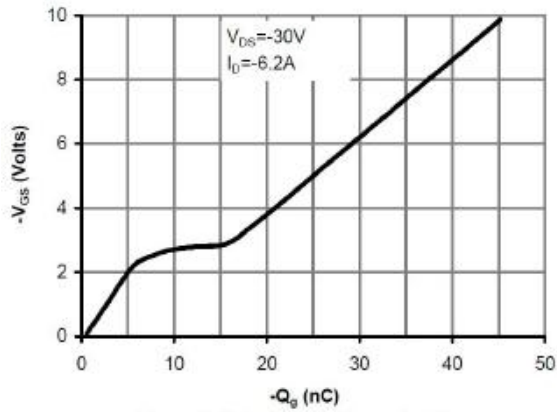


Figure 7: Gate-Charge Characteristics

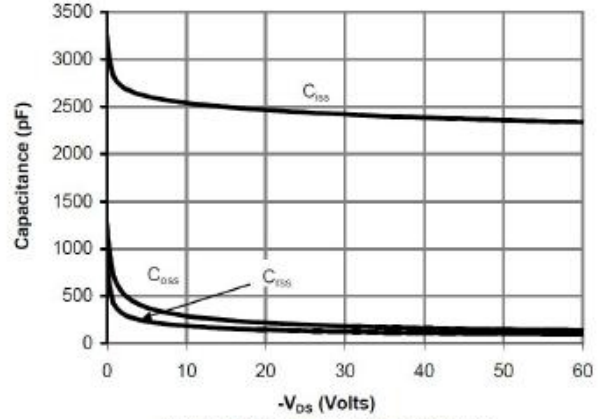


Figure 8: Capacitance Characteristics

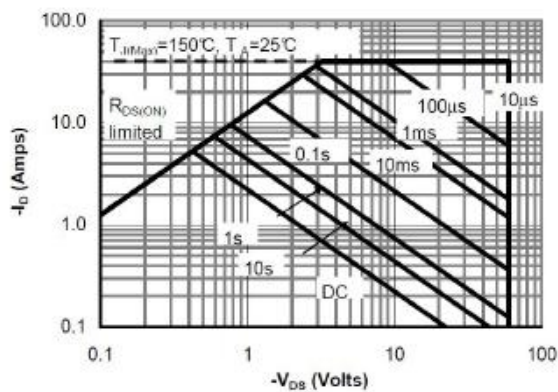


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

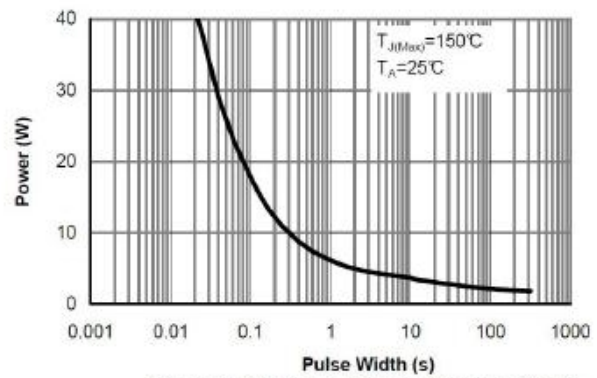


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

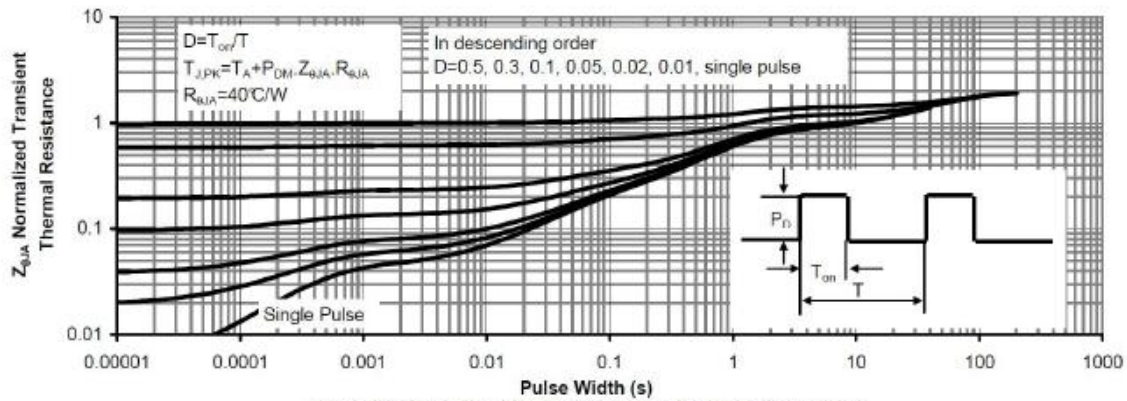
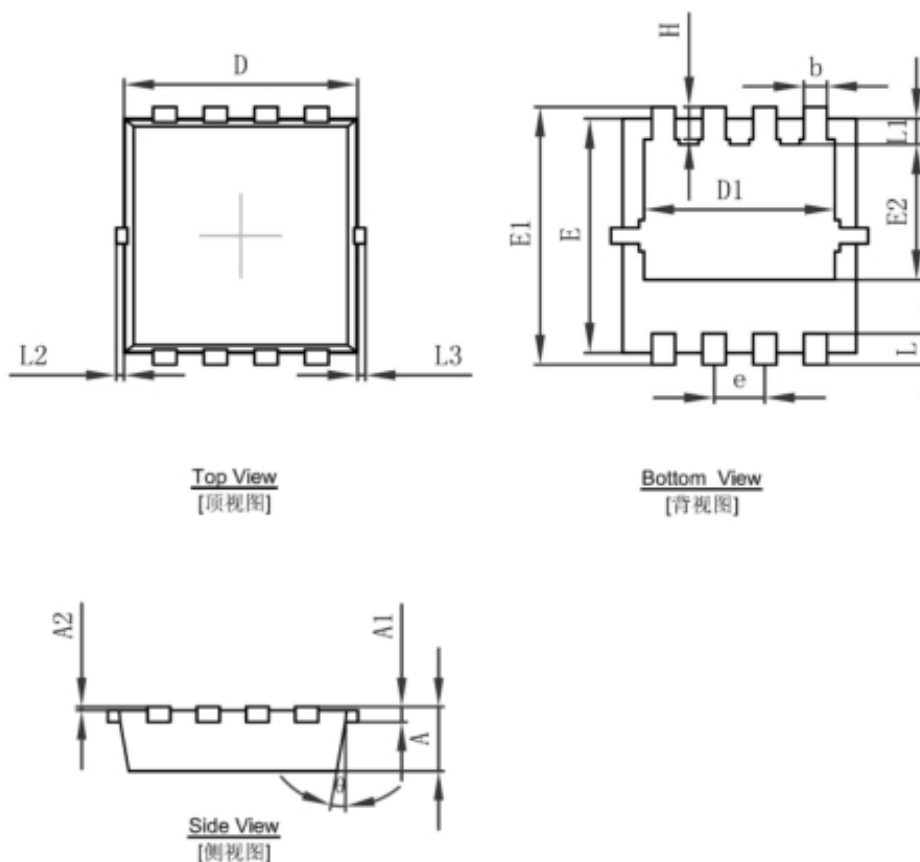


Figure 11: Normalized Maximum Transient Thermal Impedance

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°