

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-60V	30mΩ@-10V	-20A
	38mΩ@-4.5V	

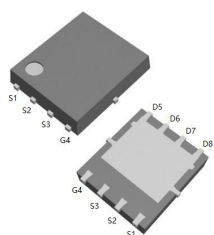
Feature

- Low Gate Charge
- Low reverse transfer capacitance

Application

- Load Switches, Adaptor Switch
- Power Management

Package

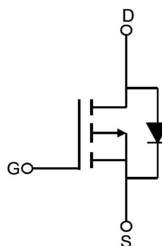


PDFNWB3.3×3.3-8L

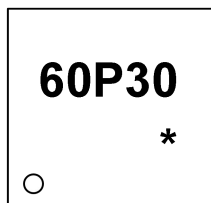


Pin Configuration

Circuit diagram



Marking



60P30 =Device Code
 * =Month Code

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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current-Continuous (Tc=25°C)	I_D	-20	A
Pulsed Drain Current	I_{DM}	-80	A
Maximum Power Dissipation(Tc=25°C)	P_D	40	W
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3.1	°C/W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55~+150	°C

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

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250μA	-60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V, 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
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-5A	-	30	40	mΩ
		V _{GS} =-4.5V, I _D =-4A	-	38	50	mΩ
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =-30V, V _{GS} =0V, f = 1MHz	-	2417	-	PF
Output Capacitance	C _{oss}		-	179	-	PF
Reverse Transfer Capacitance	C _{rss}		-	120	-	PF
Switching Characteristics						
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	-	nS
Turn-Off Delay Time	t _{d(off)}		-	44	-	nS
Turn-Off Fall Time	t _f		-	12.7	-	nS
Total Gate Charge	Q _g	V _{DS} =-30V, V _{GS} =-10V, I _D =-6.2A	-	46.5	55	nC
Gate-Source Charge	Q _{gs}		-	9.1	-	nC
Gate-Drain Charge	Q _{gd}		-	9.2	-	nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1A	-	-	-1	V

Typical Characteristics

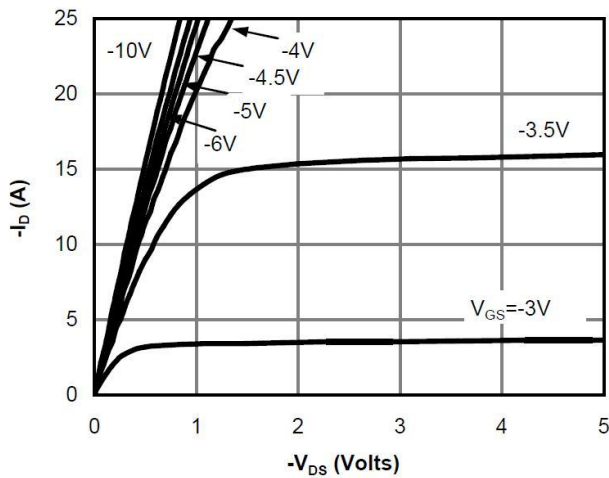


Fig 1: On-Region Characteristics

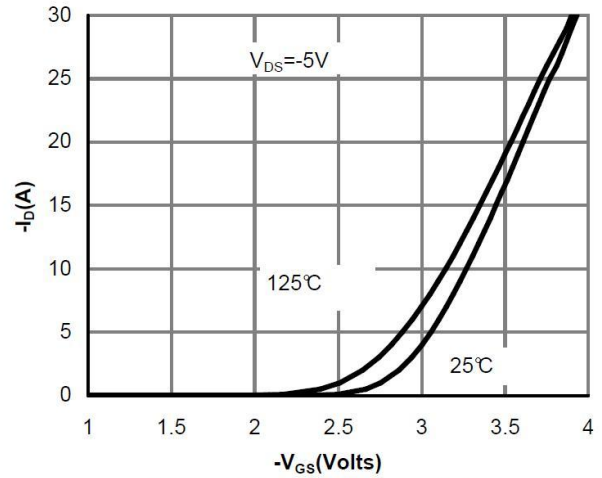


Figure 2: Transfer Characteristics

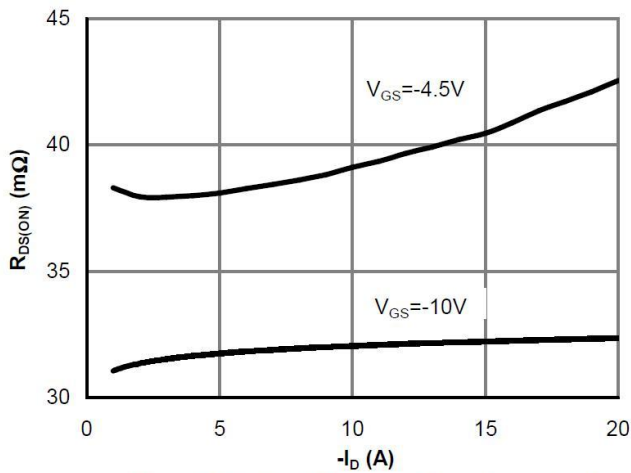


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

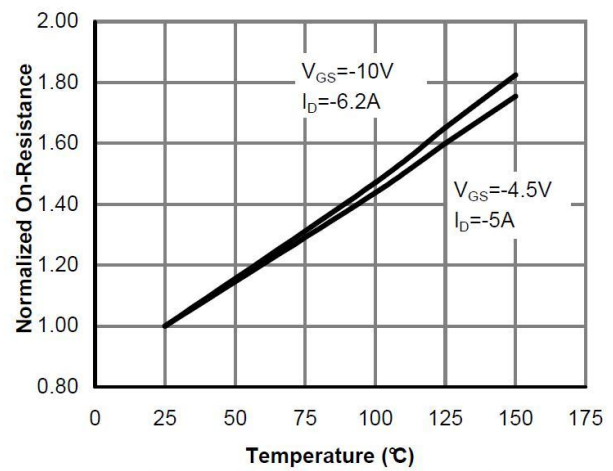


Figure 4: On-Resistance vs. Junction Temperature

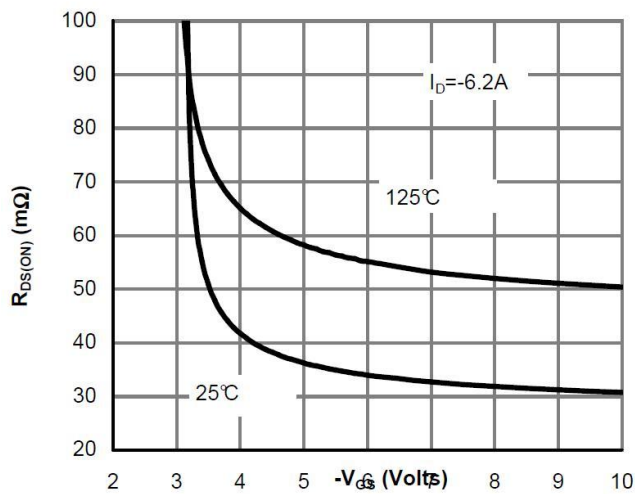


Figure 5: On-Resistance vs. Gate-Source Voltage

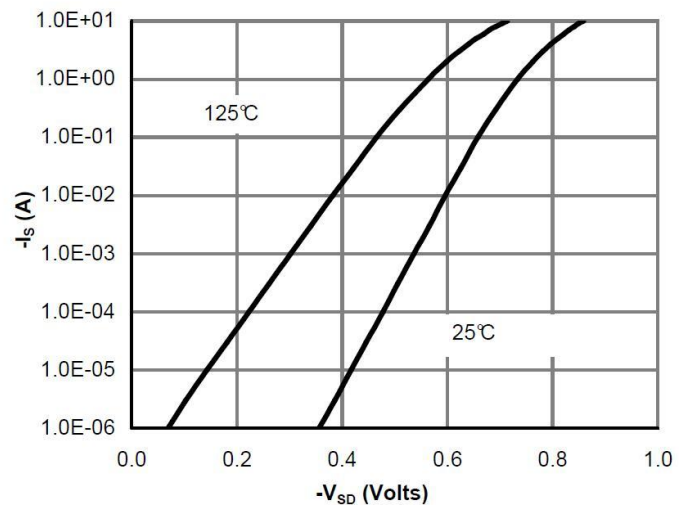
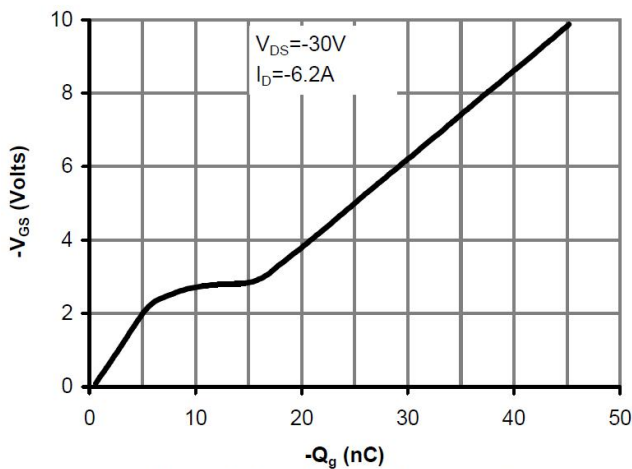
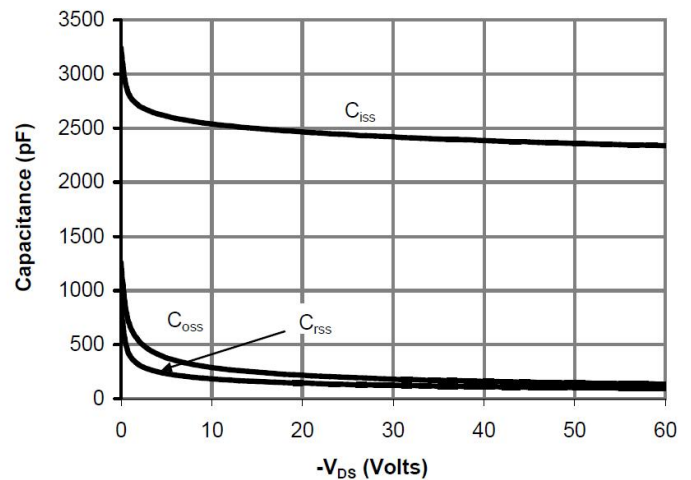
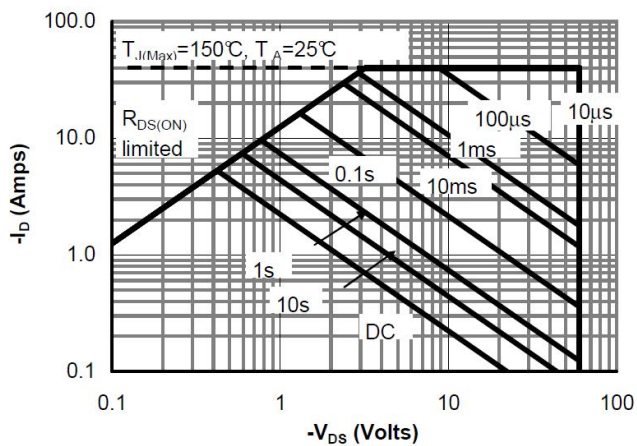
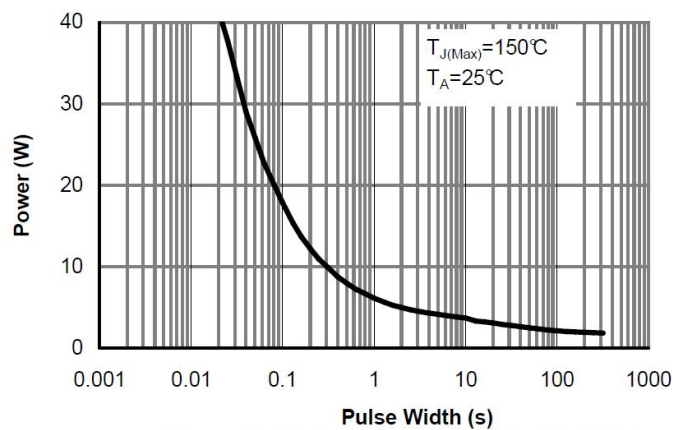
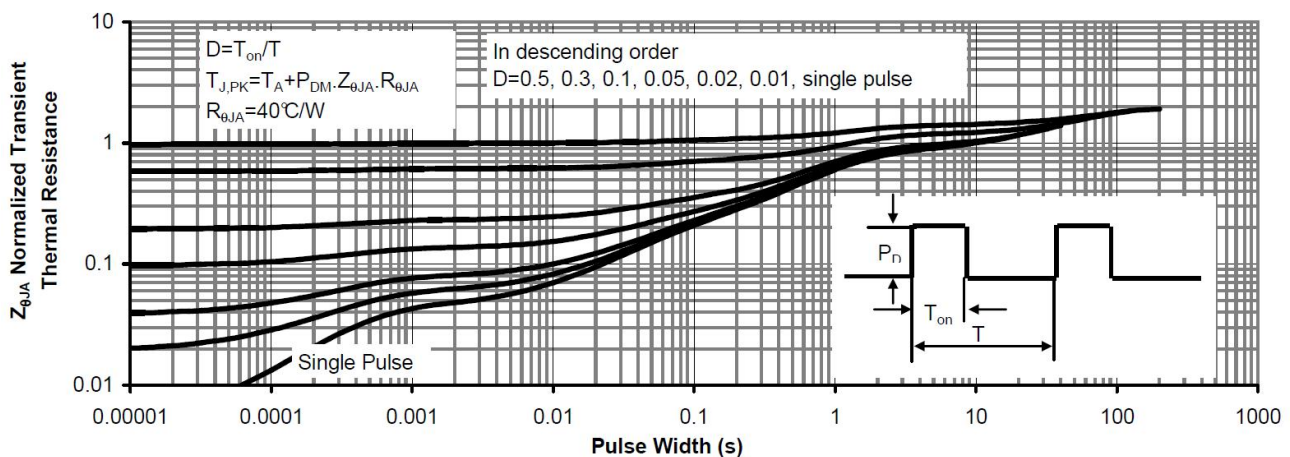
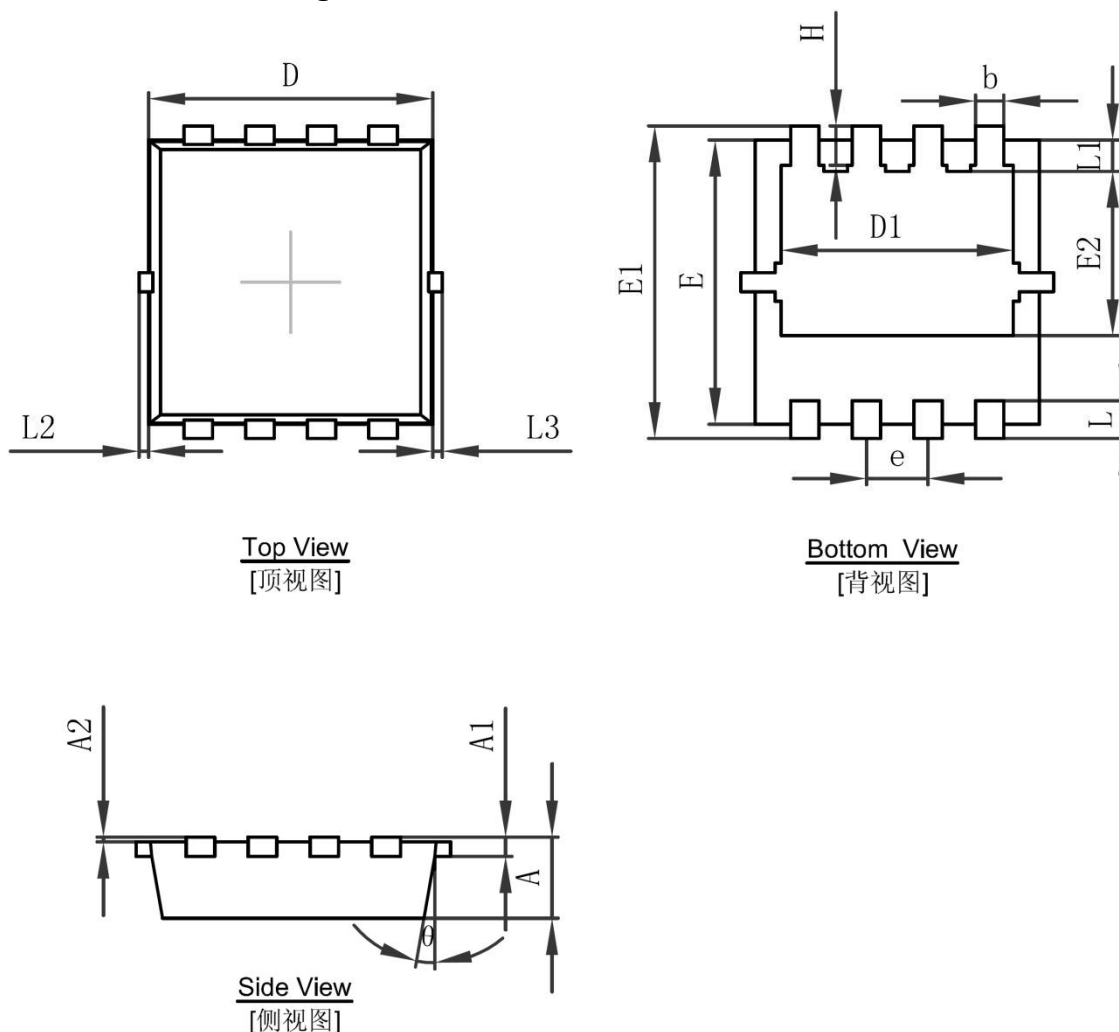


Figure 6: Body-Diode Characteristics


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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