



30V Dual N-Channel Mosfet

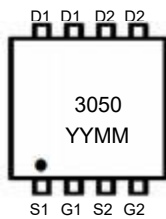
FEATURES

- $R_{DS(ON)} \leq 11.5 \text{ m}\Omega$ (10m Ω Typ.)
@ $V_{GS}=10\text{V}$
- $R_{DS(ON)} \leq 14 \text{ m}\Omega$ (12.5m Ω Typ.)
@ $V_{GS}=4.5\text{V}$

APPLICATIONS

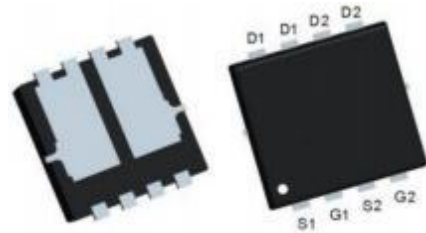
- Load Switch
- Motor control

MARKING

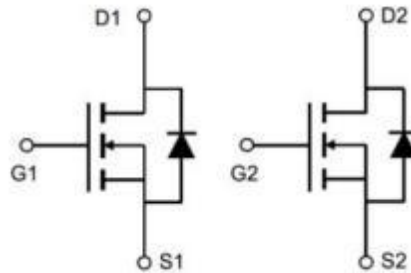


YYMM: Date Code(year&month)

PDFNWB3.3*3.3-8L



N-CHANNEL MOSFET

MAXIMUM RATINGS ($T_C=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Max	Unit
V_{DS}	Drain- Source Voltage	$T_C = 25^\circ\text{C}$	30		V
V_{GS}	Gate- Source Voltage	$T_C = 25^\circ\text{C}$	-	± 20	V
I_D	Drain Current	$T_C = 25^\circ\text{C}$, $V_{GS} = 10 \text{ V}$	-	45	A
I_{DM}	Pulsed Drain Current ^{note1}	$T_C = 25^\circ\text{C}$, $V_{GS} = 10 \text{ V}$	-	180	A
P_{tot}	Total Power Dissipation	$T_C = 25^\circ\text{C}$	-	35	W
T_{stg}	Storage Temperature		- 55	150	$^\circ\text{C}$
T_J	Junction Temperature		-	150	$^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance- Junction to Case		-	3.5	$^\circ\text{C} / \text{W}$



MOSFET ELECTRICAL CHARACTERISTICS Tc=25 °C unless otherwise specified

Symbol	Param	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250pA$	30	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V, T_J=25^\circ C$	-	-	1.0	PA
I_{GSS}	Gate to Body Leakage Current	$V_{DS}=0V, V_{GS}=\pm 20V$	-	-	± 100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250pA$	1.0	1.5	3.0	V
$R_{DS(on)}$	Static Drain-Source on-Resistance <small>note2</small>	$V_{GS}=10V, I_D=25A$	-	10	11.5	mQ
		$V_{GS}=4.5V, I_D=20A$	-	12.5	14	mQ
g_{FS}	Forward Transconductance	$V_{GS}=5V, I_D=20A$	15	-	-	S
Dynamic Characteristics						
C_{iss}	Input Capacitance	$V_{DS}=15V, V_{GS}=0V, f=1.0MHz$	-	1520	-	pF
C_{oss}	Output Capacitance		-	240	-	pF
C_{rss}	Reverse Transfer Capacitance		-	132	-	pF
Q_g	Total Gate Charge	$V_{DS}=10V, I_D=25A, V_{GS}=10V$	-	23	-	nC
Q_{gs}	Gate-Source Charge		-	7	-	nC
Q_{gd}	Gate-Drain("Miller") Charge		-	4.5	-	nC
Switching Characteristics						
$t_{d(on)}$	Turn-on Delay Time	$V_{DD}=15V, V_{GS}=10V, R_{REN}=1.8Q, I_D=20A$	-	10	-	ns
t_r	Turn-on Rise Time		-	8	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	30	-	ns
t_f	Turn-off Fall Time		-	5	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I_S	Maximum Continuous Drain to Source Diode Forward Current		-	-	45	A
I_{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	180	A
t_{rr}	Rever Recovery Time	$T_J=25^\circ C, I_F=50A, di/dt=100A/ps$	-	22	35	nS
Q_{rr}	Reverse Recovery Charge		-	11	18	nC
V_{SD}	Drain to Source Diode Forward Voltage	$V_{GS}=0V, I_S=25A$	-	-	1.2	V

Notes: 1. Repetitive Rating: Pulse width limited by maximum junction temperature

2. Pulse Test: Pulse width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$

Typical Performance Characteristics

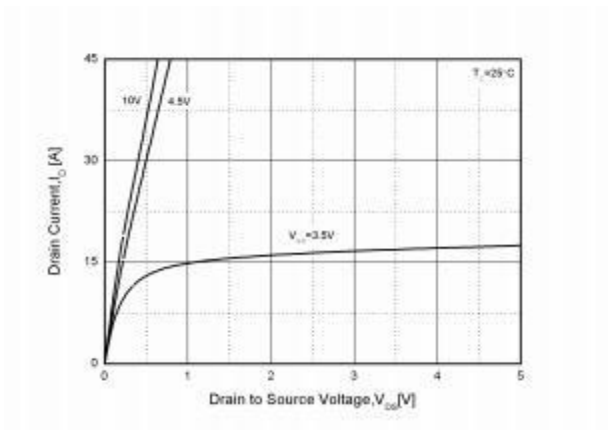


Figure1. Output Characteristics

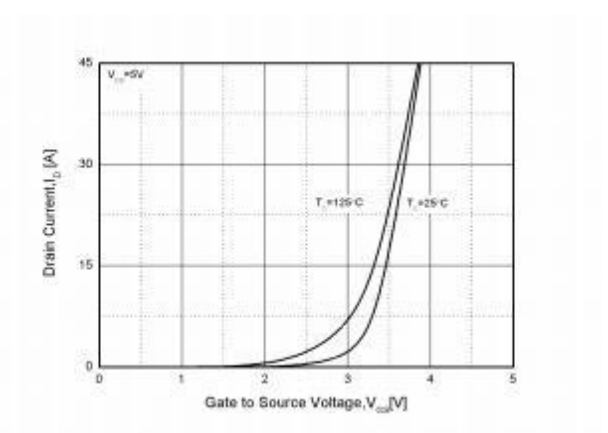


Figure2. Transfer Characteristics

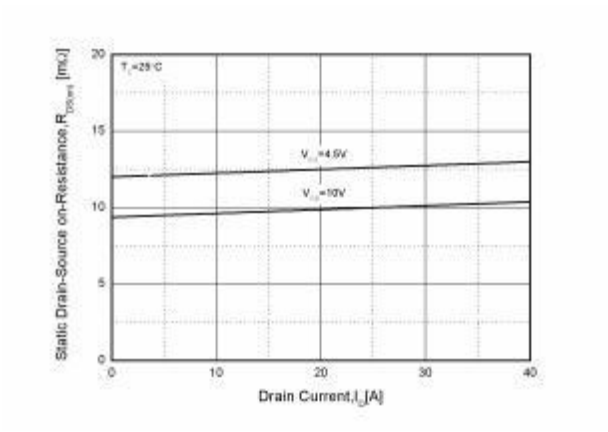


Figure3. Rdson-Drain Current

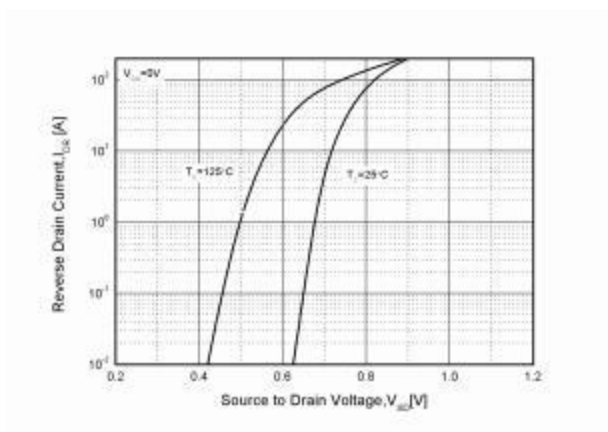


Figure4. Typical Source-Drain Diode Forward Voltage

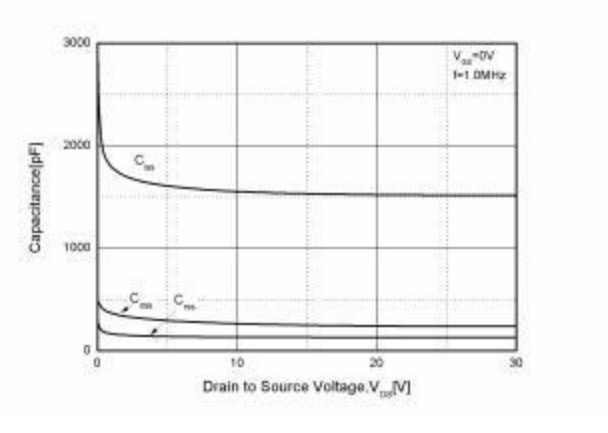


Figure5. Capacitance Characteristics

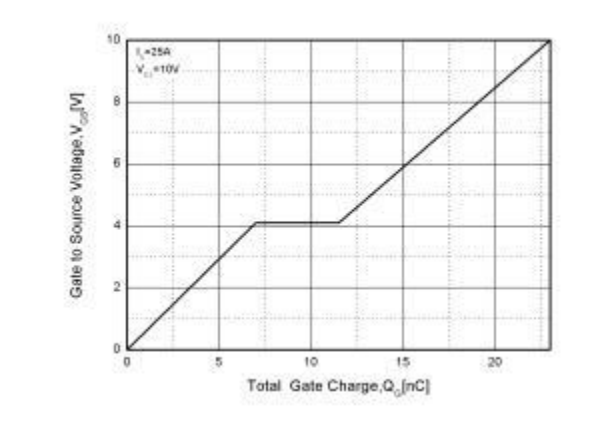


Figure6. Gate Charge

Typical Performance Characteristics (cont.)

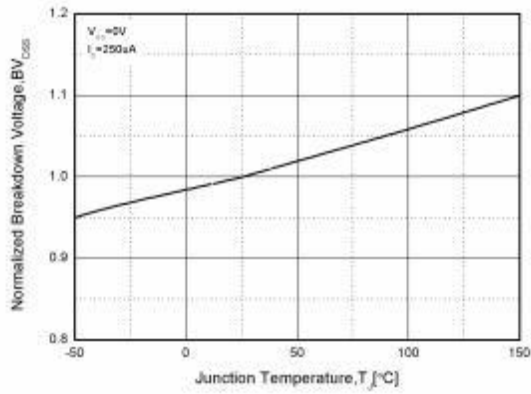


Figure7. Normalized Breakdown Voltage vs. Temperature

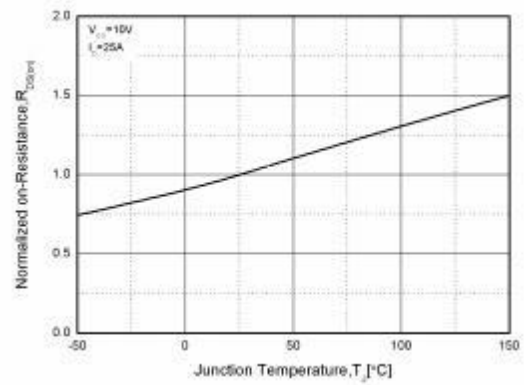


Figure8. Normalized on Resistance vs. Temperature

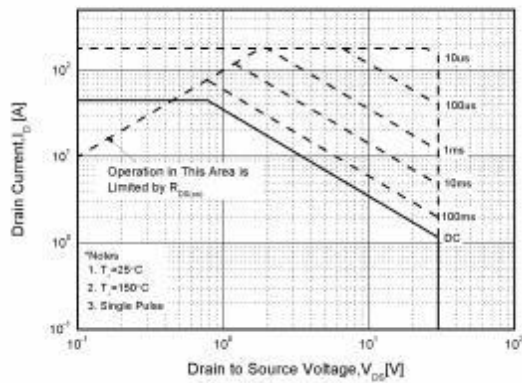


Figure9. Safe Operation Area

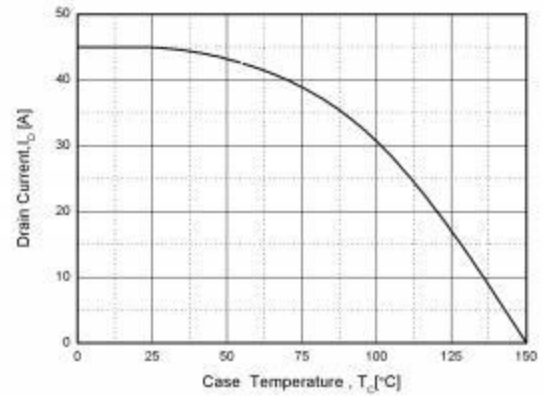


Figure10. Drain Current vs. Case Temperature

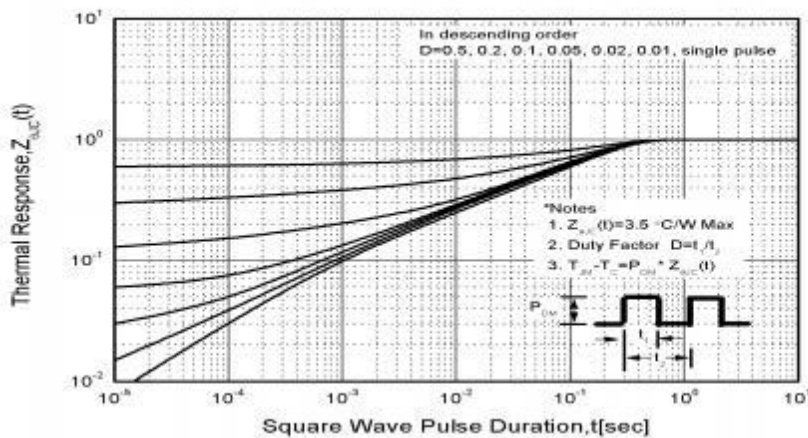
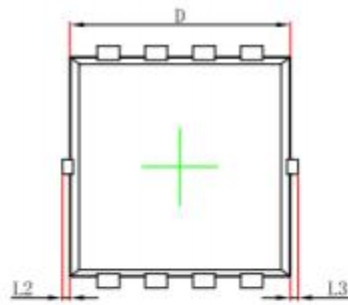
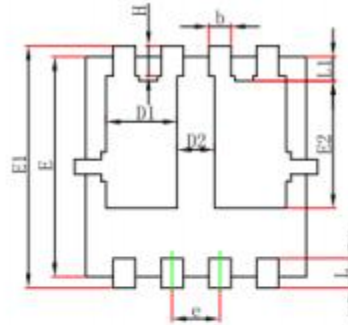


Figure11. Transient Thermal Response Curve

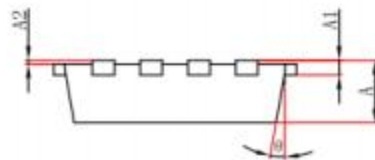
PDFNWB3.3*3.3-8L PACKAGE OUTLINE DRAWING



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	0.650	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	0.935	1.135	0.037	0.045
D2	0.280	0.480	0.011	0.019
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°