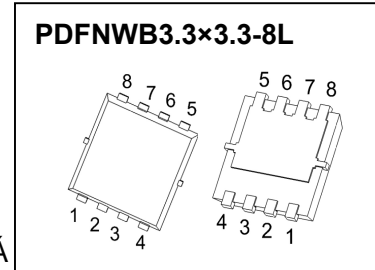




PDFNWB3.3x3.3-8L Plastic-Encapsulate MOSFETS

AB65N04 N-Channel Power MOSFET

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
1 €X	4.8{ 0 F€X	61 €E
	6.2{ 0 I €€X	



DESCRIPTION

The AB65N04 is a power MOSFET with a low on-resistance and high switching speed. It is suitable for use in power switching applications. The device is characterized by its low thermal resistance and high reliability.

FEATURES

- Power MOSFET with low on-resistance
- High switching speed
- Low thermal resistance
- High reliability
- Suitable for use in power switching applications
- Low gate charge
- High current capability

APPLICATIONS

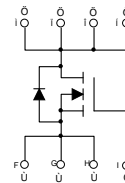
- Power switching
- Motor drives
- Inverters
- Amplifiers
- Switching regulators

MARKING



AB65N04
 61 €E
 YY

EQUIVALENT CIRCUIT



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

Parameter	Symbol	Limit	Unit
Drain-Source Voltage (V _{DS})	X_{DS}	1 €A	XÁ
Gate-Source Voltage (V _{GS})	X_{GS}	† 6€A	XÁ
Continuous Drain Current (I _D)	Q_{AD}	61 Á	€Á
Transient Drain Current (I _{DM})	Q_{TD}	24€A	€Á
Continuous Power Dissipation (P _{tot})	Q_{PE}	FGE	{ RÁ
Storage Time (t _{stg})	U_{stg}	57	Y Á
Switching Temperature (T _{sw})	U_{sw}	83.3	°CBY Á
Case Temperature (T _{case})	U_{rc}	2.2	°CBY Á
Operating Temperature (T _{op}) and Junction Temperature (T _j)	$V_{RAT_{stg}}$	€Í Á €FÍ €Á	°C

MOSFET ELECTRICAL CHARACTERISTICS

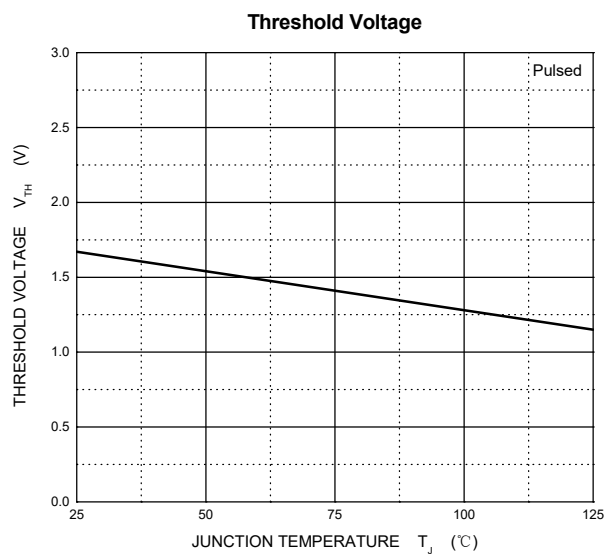
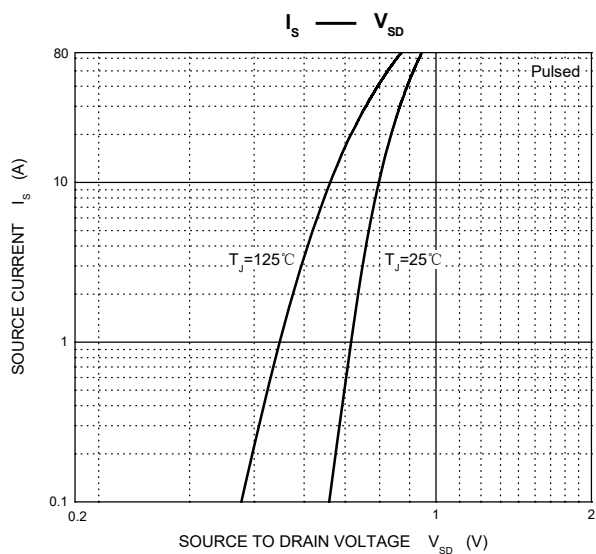
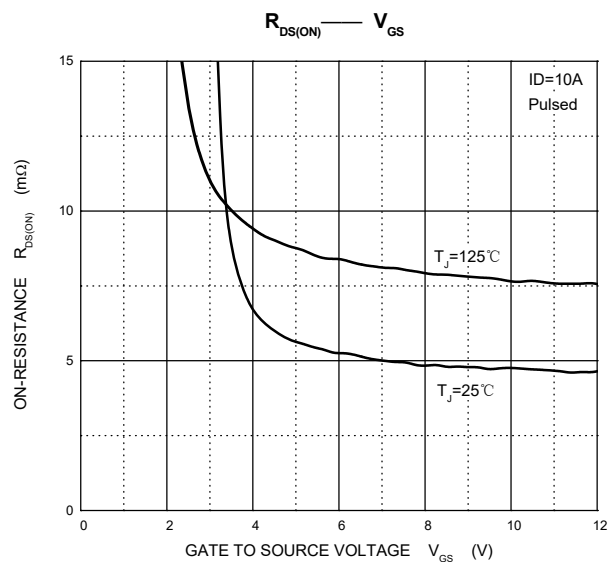
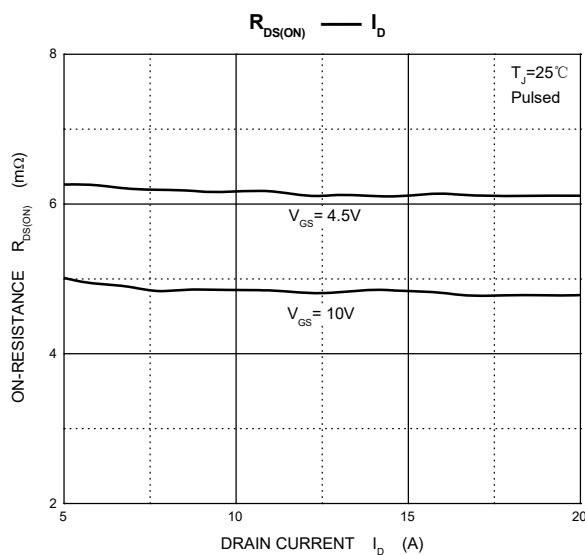
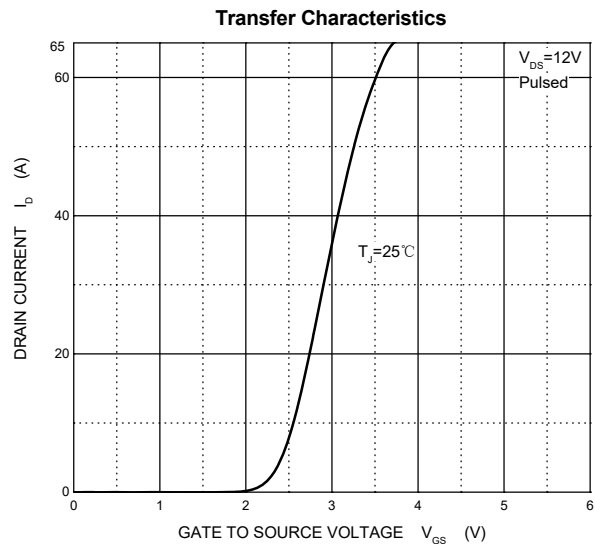
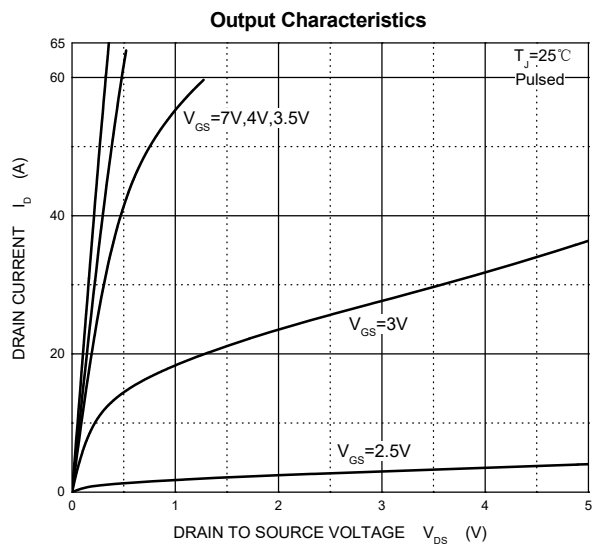
$T_a=25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	40			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 32V, V_{GS} = 0V$	$T_J = 25\text{ }^\circ\text{C}$		1.0	μA
			$T_J = 125\text{ }^\circ\text{C}$		100	
Gate-body leakage current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 20V$			± 100	nA
On characteristics ④						
Gate-threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.0	1.7	2.5	V
Static drain-source on-state resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 20A$		4.8	6.0	m Ω
		$V_{GS} = 4.5V, I_D = 10A$		6.2	8.0	m Ω
Forward transconductance	g_{fs}	$V_{DS} = 10V, I_D = 10A$		15		S
Dynamic characteristics ④ ⑤						
Input capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		2540	3540	μF
Output capacitance	C_{oss}			218	420	
Reverse transfer capacitance	C_{rss}			178	247	
Gate resistance	R_g	$f = 1MHz$		1.6		Ω
Switching characteristics ④ ⑤						
Total gate charge	Q_g	$V_{DS} = 32V, V_{GS} = 4.5V, I_D = 10A$		25.2	54	nC
Gate-source charge	Q_{gs}			5.3	14	
Gate-drain charge	Q_{gd}			12.5	23	
Turn-on delay time	$t_{d(on)}$	$V_{DS} = 20V, I_D = 1A, V_{GS} = 10V, R_G = 3\Omega$		13.7	30	ns
Turn-on rise time	t_r			19.2	40	
Turn-off delay time	$t_{d(off)}$			40	80	
Turn-off fall time	t_f			13	30	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage	V_{SD} ④	$V_{GS} = 0V, I_S = 10A$			1.2	V
Continuous drain-source diode forward current	I_S ①				65	A
Pulsed drain-source diode forward current	I_{SM} ②				240	A

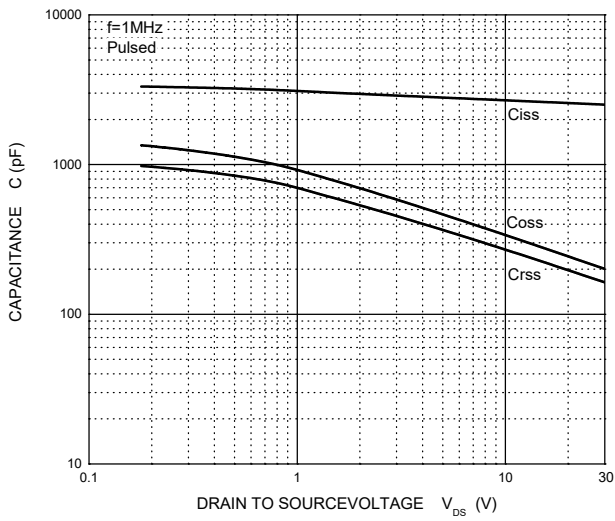
Notes:

- $T_C = 25\text{ }^\circ\text{C}$ Limited only by maximum temperature allowed.
- $P_W \leq 10\mu s$, Duty cycle $\leq 1\%$.
- EAS condition: $V_{DD} = 20V, V_{GS} = 10V, L = 0.1mH, R_g = 25\Omega$ Starting $T_J = 25\text{ }^\circ\text{C}$.
- Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- Guaranteed by design, not subject to production.
- The value of $R_{\theta JA}, R_{\theta JC}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a = 25\text{ }^\circ\text{C}$.

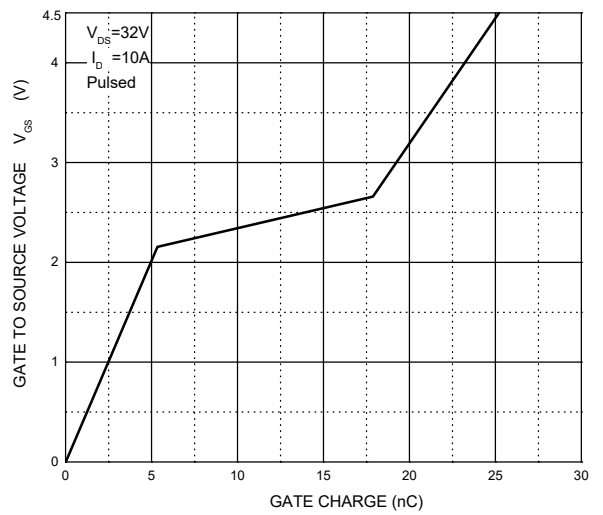
MOSFET ELECTRICAL CHARACTERISTICS



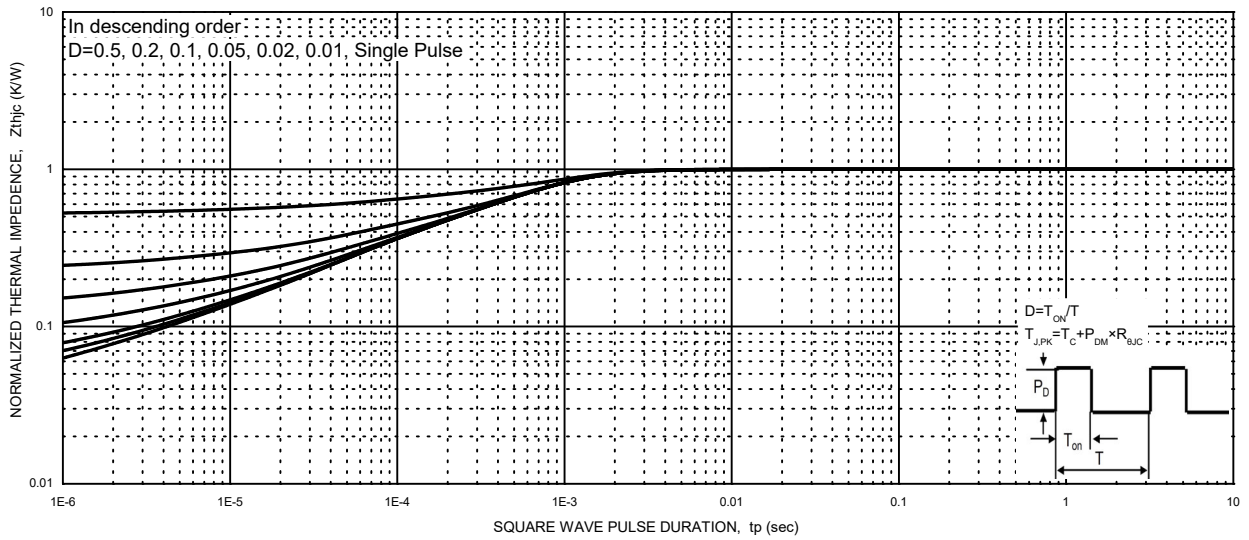
Capacitances



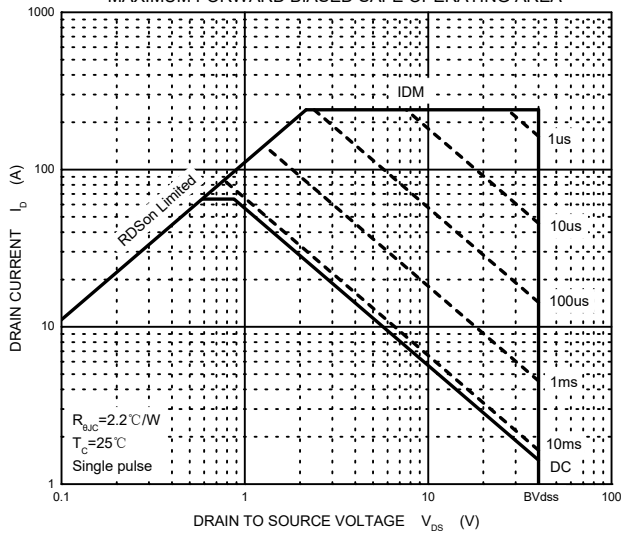
Gate Charge



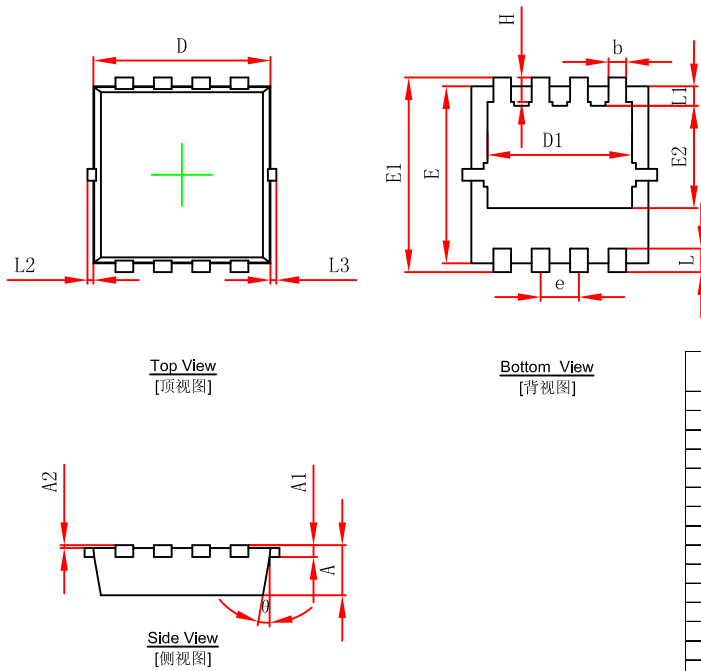
NORMALIZED TRANSIENT THERMAL IMPEDANCE



MAXIMUM FORWARD BIASED SAFE OPERATING AREA

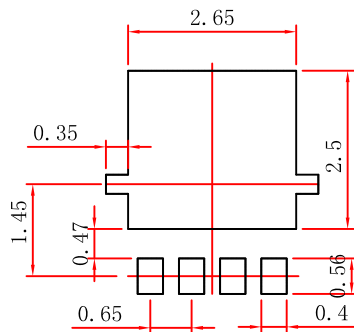


PDFNWB3.3x3.3-8L Package Outline Dimensions



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°

PDFNWB3.3x3.3-8L Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.