

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	9mΩ@10V	20A
	13mΩ@4.5V	

Feature

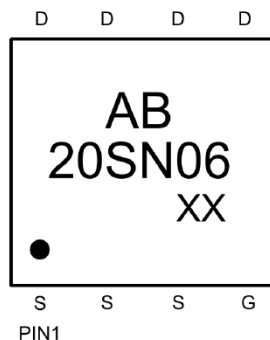
- Low $R_{DS(ON)}$
- Low Gate Charge
- Optimized for fast-switching applications

Application

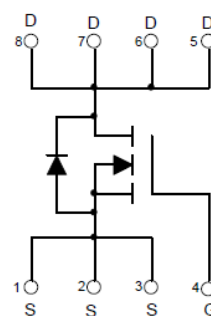
- Synchronous Rectification in DC/DC and AC/DC Converters
- Industrial and Motor Drive application



MARKING:



Equivalent Circuit



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

Parameter	Symbol	Value	Unit
Continuous Drain Current ^G	I_D	$T_C=25^{\circ}C$	20
		$T_C=100^{\circ}C$	15
Drain to Source Voltage	V_{DS}	60	V
Gate to Source Voltage	V_{GS}	± 20	V
Pulsed Drain Current ^C	I_{DM}	80	A
Avalanche Energy ^C	E_{AS}	195	mJ
Power Dissipation ^A	P_D	$T_C=25^{\circ}C$	5.2
		$T_C=100^{\circ}C$	3.4
Thermal Resistance Junction to Ambient ^A	$R_{\theta JA}$	$T \leq 10s$	24
Thermal Resistance Junction to Ambient ^{A,D}		Steady-State	45
Thermal Resistance Junction to Case	$R_{\theta JC}$	14.4	$^{\circ}C/W$
Operating and Storage Temperature	T_J, T_{stg}	-55 ~ 150	$^{\circ}C$

MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V, T_J = 25^\circ\text{C}$			1	μA
		$V_{DS} = 60V, V_{GS} = 0V, T_J = 100^\circ\text{C}$			100	
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1.1	1.7	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 12A$		8.2	9.0	$m\Omega$
		$V_{GS} = 4.5V, I_D = 12A$		10.5	13.0	$m\Omega$
Forward transconductance	g_{FS}	$V_{DS} = 5V, I_D = 12A$		70		S
Gate Resistance	R_G	$V_{GS} = 0V, V_{DS} \text{ Open}, f = 1\text{MHz}$		1.6		Ω
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 30V, V_{GS} = 0V, f = 1\text{MHz}$		1988		μF
Output Capacitance	C_{oss}			470		
Reverse Transfer Capacitance	C_{rss}			14		
Total gate charge(10V)	Q_g	$V_{DD} = 30V, V_{GS} = 10V, I_D = 12A$		31		nC
Gate-source charge	Q_{gs}			6		
Gate-drain charge	Q_{gd}			5		
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V, R_L = 2.5\Omega, R_{GEN} = 3\Omega$		10.5		ns
Turn-on rise time	t_r			4.5		
Turn-off delay time	$t_{d(off)}$			29.5		
Turn-off fall time	t_f			8		
Source-Drain Diode characteristics						
Body Diode Voltage	V_{DS}	$T_J = 25^\circ\text{C}, I_S = 12A, V_{GS} = 0V$		0.9	1.2	V
Body-Diode Continuous Current ^G	I_S				12	A
Reverse Recovery Time	t_{rr}	$I_F = 12A, dI/dt = 500A/\mu s$		17		ns
Reverse Recovery Charge	Q_{rr}				58	

A. The value of $R_{\theta JA}$ is measured with the device mounted on 1in2 FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$. The Power dissipation P_D is based on $R_{\theta JA} \leq 10s$ and the maximum allowed junction temperature of 150°C . The value in any given application depends on the user's specific board design.

B. The power dissipation P_D is based on $T_{J(MAX)} = 150^\circ\text{C}$, using junction-to-case thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used.

C. Single pulse width limited by junction temperature $T_{J(MAX)} = 150^\circ\text{C}$.

D. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to case $R_{\theta JC}$ and case to ambient.

E. The static characteristics in Figures 1 to 6 are obtained using $< 300\mu s$ pulses, duty cycle 0.5% max.

F. These curves are based on the junction-to-case thermal impedance which is measured with the device mounted to a large heatsink, assuming a maximum junction temperature of $T_{J(MAX)} = 150^\circ\text{C}$. The SOA curve provides a single pulse rating.

G. The maximum current rating is package limited.

Typical Electrical and Thermal Characteristics

Fig 1: Output Characteristics

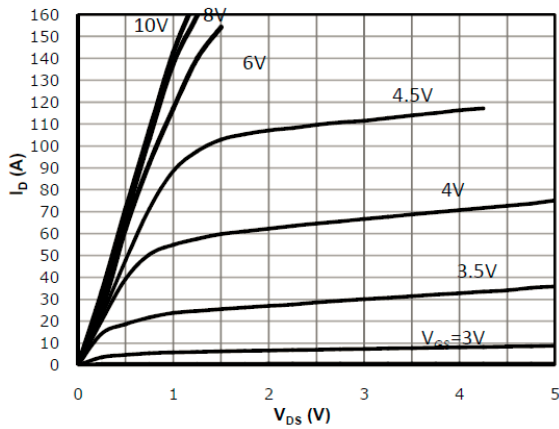


Fig 2: Transfer Characteristics

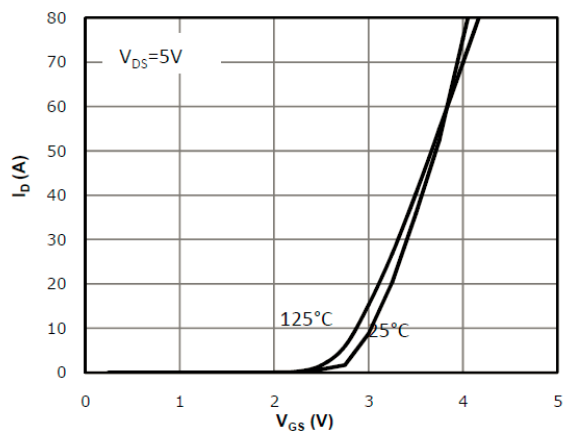


Fig 3: $R_{DS(on)}$ vs Drain Current and Gate Voltage

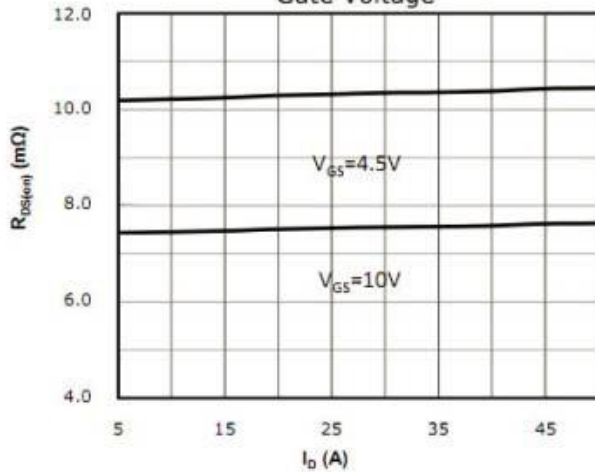


Fig 4: $R_{DS(on)}$ vs Gate Voltage

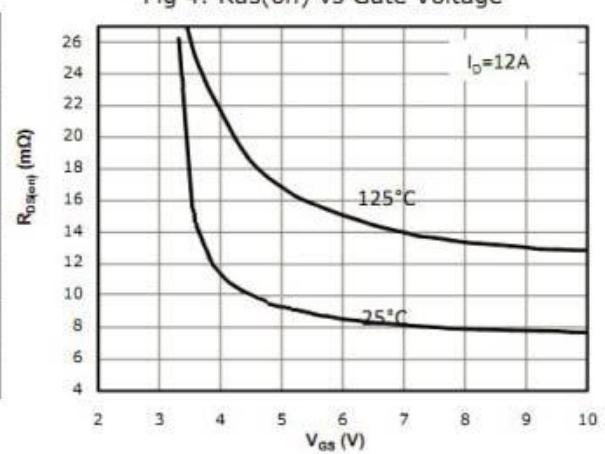


Fig 5: Rds(on) vs. Temperature

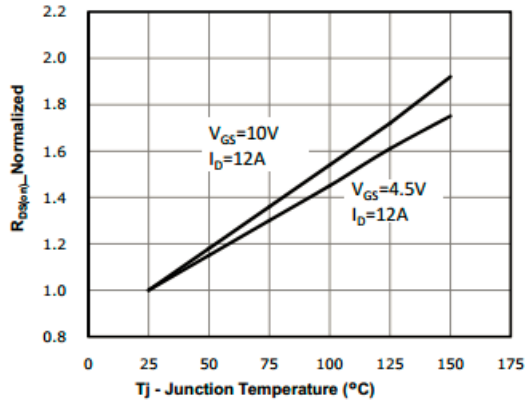


Fig 6: Capacitance Characteristics

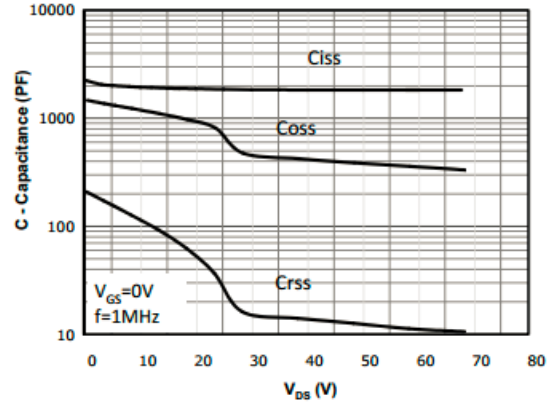


Fig 7: Gate Charge Characteristics

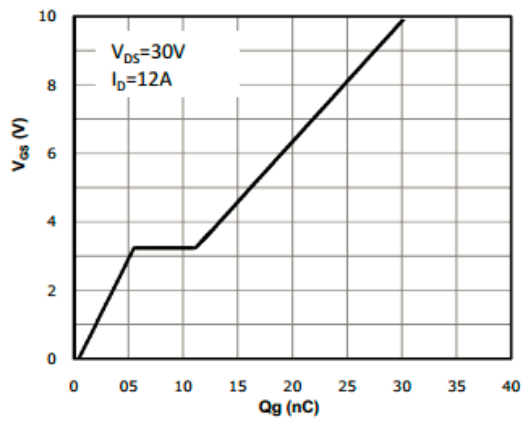
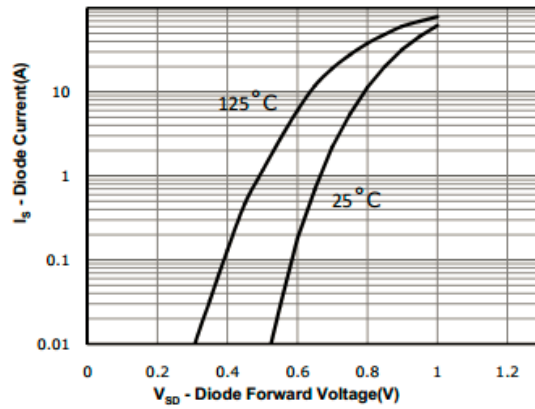
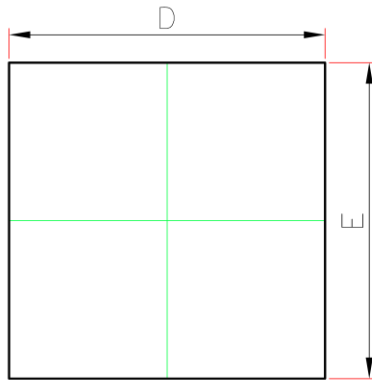


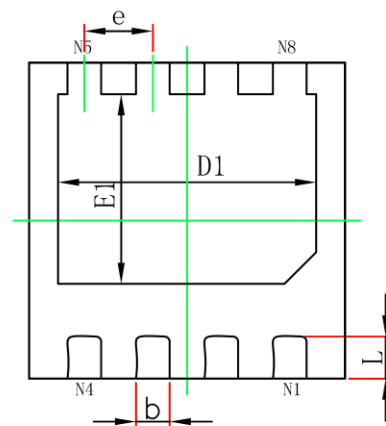
Fig 8: Body-diode Forward Characteristics



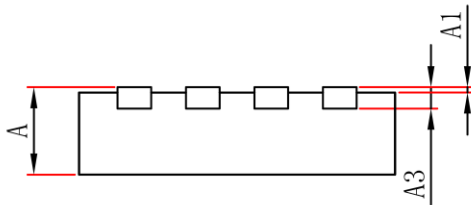
DFNWB3×3-8L-C Package Information



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203REF		0.008REF	
D	2.924	3.076	0.115	0.121
E	2.924	3.076	0.115	0.121
D1	2.350	2.550	0.093	0.100
E1	1.700	1.900	0.067	0.075
k	0.200MIN.		0.008MIN.	
b	0.270	0.370	0.011	0.015
e	0.650TYP.		0.026TYP.	
L	0.324	0.476	0.013	0.019

单击下面可查看定价，库存，交付和生命周期等信息

[>>GP\(格瑞宝\)](#)