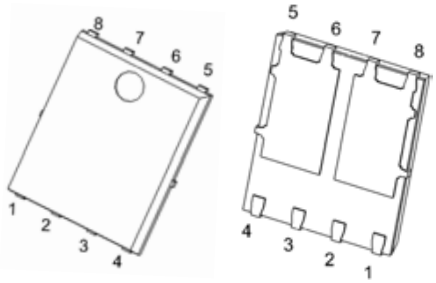
JST35GDN01D5-Q

100V Dual N-Channel Mosfet

FEATURES

- $R_{DS(ON)}$ ≤ 17mΩ (14mΩ Typ.) @V_{GS}=10V
- $R_{DS(ON)}$ ≤ 22.5mΩ (20mΩ Typ.) @V_{GS}=4.5V
- AEC Q101 qualified
- Green Product (RoHS compliant)
- 100% UIS TEST

PDFNWB5*6-8L

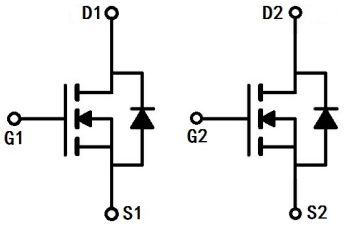


1: S1	3: S2	5: D2	7: D1
2: G1	4: G2	6: D2	8: D1

APPLICATIONS

- Automotive Systems
- Power Management
- PWM Applications

N-CHANNEL MOSFET



MARKING

YYMM:Date Code(year & month)

MAXIMUM RATINGS (Tc=25°C unless otherwise noted)

Symbol	Parameter		Max.	Units
V_{DSS}	Drain-Source Voltage		100	V
V_{GSS}	Gate-Source Voltage		±20	V
I_D	Continuous Drain Current @V_{GS}=10V note1	T_C = 25℃	35	A
		T_C = 100℃	25	A
I_{DM}	Pulsed Drain Current note2		100	A
E_{AS}	Single Pulsed Avalanche Energy note3		6.25	mJ
P_D	Power Dissipation		43	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case		3.5	℃/W
T_J, T_{STG}	Operating and Storage Temperature Range		-55 to +175	℃

MOSFET ELECTRICAL CHARACTERISTICS Tc=25 °C unless otherwise specified

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V,I_D=250μA	100	-	-	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} =100V, V_{GS} = 0V,	-	-	1.0	μA
I_{GSS}	Gate to Body Leakage Current	V_{DS} =0V,V_{GS} = ±20V	-	-	±100	nA
On Characteristics						
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}= V_{GS}, I_D=250μA	1.0	1.8	2.5	V
$R_{DS(on)}$	Static Drain-Source on-Resistance note4	V_{GS} =10V, I_D =20A	-	14	17	mΩ
		V_{GS} =4.5V, I_D =15A	-	20	22.5	
Dynamic Characteristics note5						
C_{iss}	Input Capacitance	V_{DS} = 50V, V_{GS} =0V f = 1.0MHz	-	1150	-	pF
C_{oss}	Output Capacitance		-	340	-	pF
C_{rss}	Reverse Transfer Capacitance		-	15	-	pF
R_g	Gate resistance	V_{GS}=0V, V_{DS}=0V f = 1.0MHz	-	1.7	-	Ω
Q_g	Total Gate Charge	V_{DS} =50V, I_D =20A, V_{GS} =10V	-	35	-	nC
Q_{gs}	Gate-Source Charge		-	8.6	-	nC
Q_{gd}	Gate-Drain(“Miller”) Charge		-	5	-	nC
Switching Characteristics note5						
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=50V, I_D =20A, R_{GEN}=3Ω, V_{GS} =10V	-	9.5	-	ns
t_r	Turn-on Rise Time		-	7	-	ns
$t_{d(off)}$	Turn-off Delay Time		-	28	-	ns
t_f	Turn-off Fall Time		-	15	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
V_{SD}	Drain to Source Diode Forward Voltage	V_{GS} =0V, I_S=10A	-	-	1.2	V

Notes:1. T_C=25℃ Limited only by maximum temperature allowed. Calculated continuous current based on maximum allowable junction temperature.

2. PW≤10μs, Duty cycle≤1%

3 . EAS condition:V_{DD}=20V, VG=10V, L=0.5 mH, I_{AS}=5A,starting T_j=25℃.

4 . Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 2%

5 . Guaranteed by design, not subject to production testing

TYPICAL PERFORMANCE CHARACTERISTICS

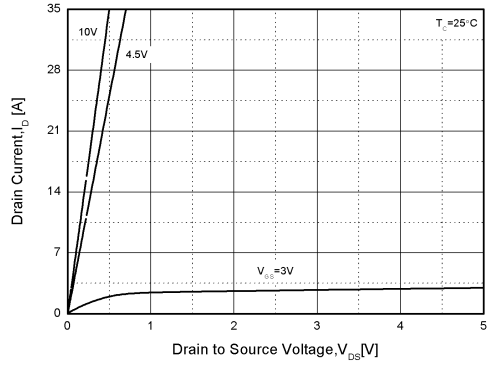


Figure1. Output Characteristics

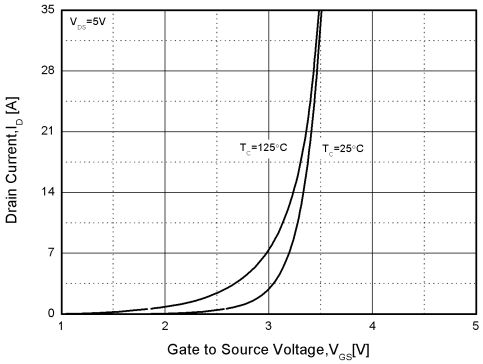


Figure2. Transfer Characteristics

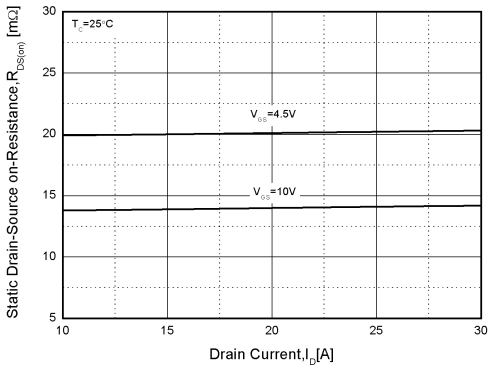


Figure3. Rdson-Drain Current

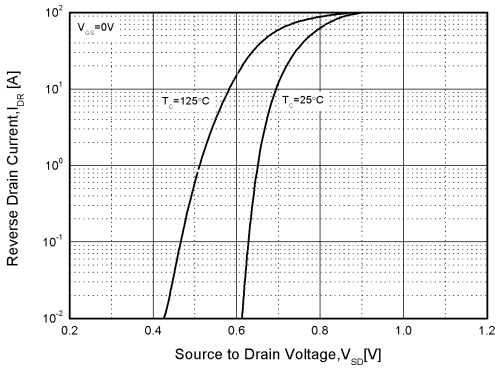


Figure4. Typical Source-Drain Diode Forward Voltage

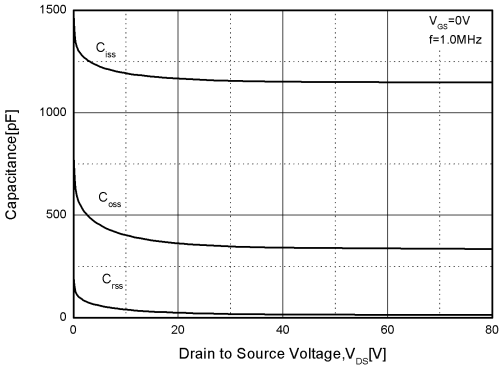


Figure5. Capacitance Characteristics

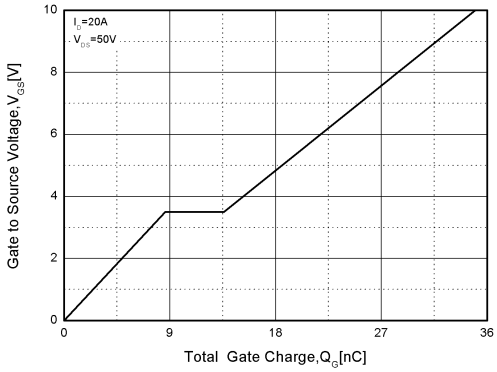


Figure6. Gate Charge

TYPICAL PERFORMANCE CHARACTERISTICS (cont.)

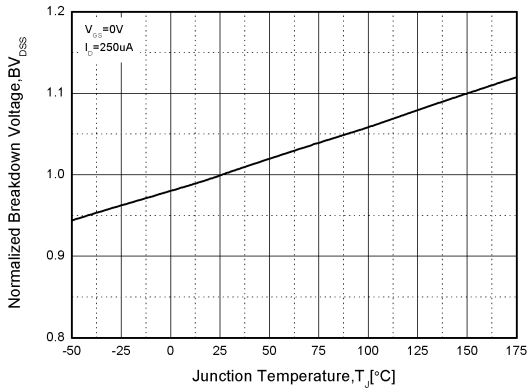


Figure7. Normalized Breakdown Voltage vs. Temperature

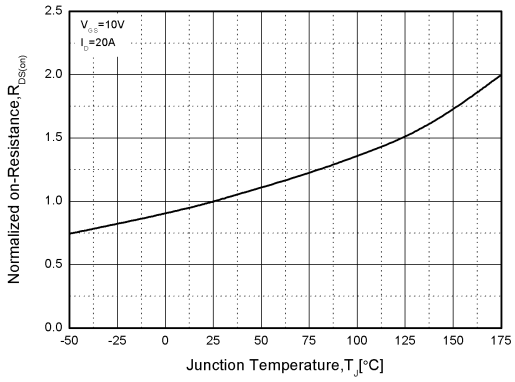


Figure8. Normalized on Resistance vs. Temperature

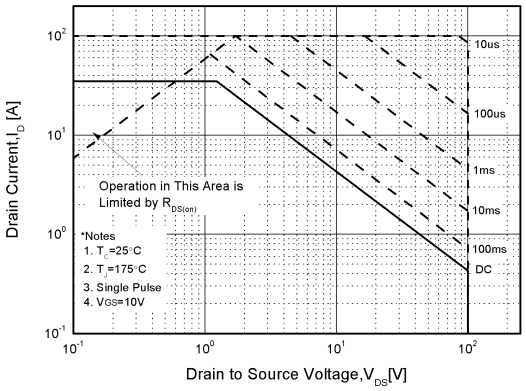


Figure9. Safe Operation Area

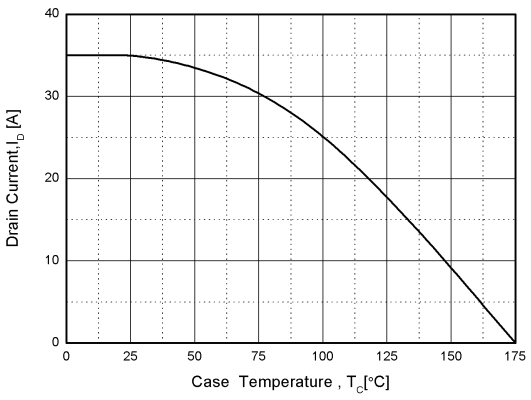


Figure10. Drain Current vs .Case Temperature

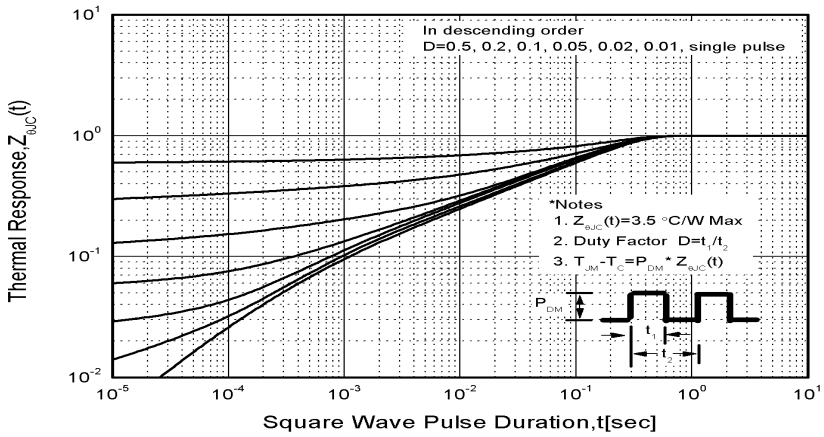
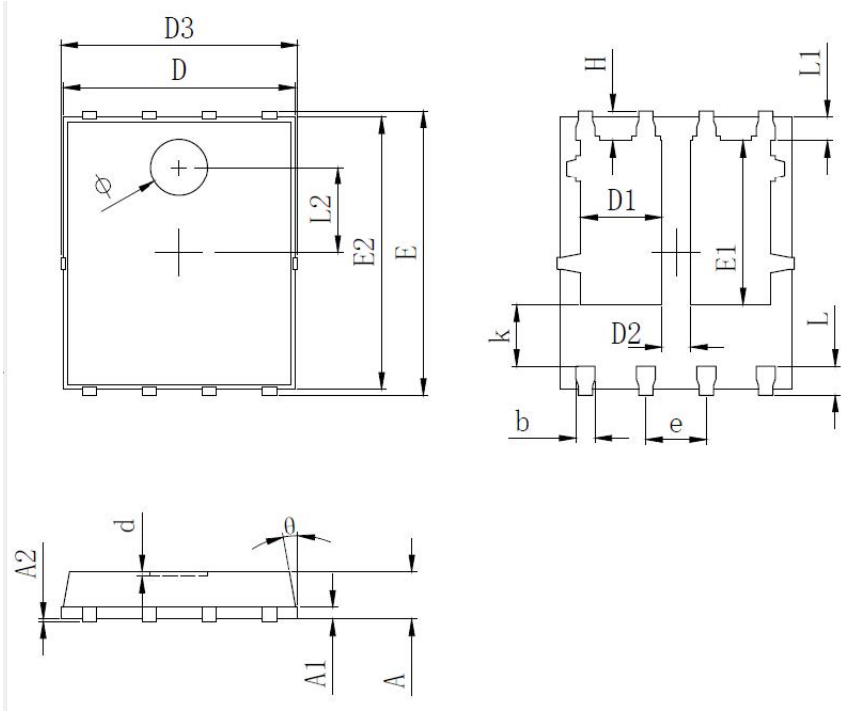


Figure11. Transient Thermal Response Curve

PDFNWB5*6-8L PACKAGE OUTLINE DRAWING



SYMBOL	MILLIMETER		
	MIN	Typ.	MAX
A	0.900	1.000	1.100
A1	0.254 REF.		
A2	0~0.05		
D	4.824	4.900	4.976
D1	1.605	1.705	1.805
D2	0.500	0.600	0.700
D3	4.924	5.000	5.076
E	5.924	6.000	6.076
E1	3.375	3.475	3.575
E2	5.674	5.750	5.826
b	0.350	0.400	0.450
e	1.270 TYP.		
L	0.534	0.610	0.686
L1	0.424	0.500	0.576
L2	1.800 REF.		
k	1.190	1.290	1.390
H	0.549	0.625	0.701
θ	8°	10°	12°
Φ	1.100	1.200	1.300
d			0.100