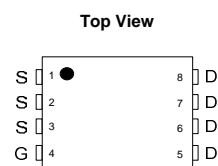
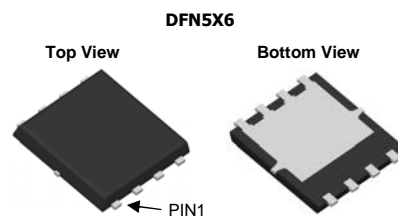


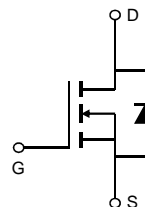
Features

- 40V, 260A
- $R_{DS(ON)}$ Typ = 1.12m Ω @ V_{GS} = 10V
- $R_{DS(ON)}$ Typ = 1.4m Ω @ V_{GS} = 4.5V
- Advanced Split Gate Trench Technology
- Excellent $R_{DS(ON)}$ and Low Gate Charge



Application

- Load Switch
- PWM Application
- Power Management



Absolute Maximum Ratings (@ T_J = 25°C unless otherwise specified)

Symbol	Parameter	Value	Units
V_{DS}	Drain-to-Source Voltage	40	V
V_{GS}	Gate-to-Source Voltage	± 20	V
I_D	Continuous Drain Current	$T_C = 25^\circ\text{C}$	260
		$T_C = 100^\circ\text{C}$	160
I_{DM}	Pulsed Drain Current ⁽¹⁾	1000	A
E_{AS}	Single Pulsed Avalanche Energy ⁽²⁾	576	mJ
P_D	Power Dissipation	$T_C = 25^\circ\text{C}$	114
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.1	$^\circ\text{C/W}$
T_J, T_{STG}	Junction & Storage Temperature Range	-55 to 150	$^\circ\text{C}$



Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Off Characteristics						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	I _D = 250μA, V _{GS} = 0V	40	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 40V, V _{GS} = 0V	-	-	1.0	μA
I _{GSS}	Gate-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	1.7	2.6	V
R _{DS(ON)}	Static Drain-Source ON-Resistance ⁽³⁾	V _{GS} = 10V, I _D = 30A	-	1.12	1.2	mΩ
		V _{GS} = 4.5V, I _D = 20A	-	1.4	1.6	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{GS} = 0V, V _{DS} = 20V, f = 1MHz	-	6681	-	pF
C _{oss}	Output Capacitance		-	3901	-	pF
C _{rss}	Reverse Transfer Capacitance		-	192	-	pF
Q _g	Total Gate Charge	V _{GS} = 0 to 10V V _{DS} = 32V, I _D = 20A	-	103	-	nC
Q _{gs}	Gate Source Charge		-	51	-	nC
Q _{gd}	Gate Drain("Miller") Charge		-	11	-	nC
Switching Characteristics						
t _{d(on)}	Turn-On DelayTime	V _{GS} = 10V, V _{DD} = 20V I _D = 20A, R _{GEN} = 3Ω	-	18	-	ns
t _r	Turn-On Rise Time		-	100	-	ns
t _{d(off)}	Turn-Off DelayTime		-	204	-	ns
t _f	Turn-Off Fall Time		-	73	-	ns
Drain-Source Diode Characteristics and Max Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current	V _{GS} = 0V, I _S = 30A	-	-	260	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	1000	A
V _{SD}	Drain to Source Diode Forward Voltage		-	-	1.2	V
trr	Body Diode Reverse Recovery Time		-	34	-	ns
Qrr	Body Diode Reverse Recovery Charge		I _F = 30A, di/dt = 100A/us	-	45	-

- Notes:
1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature.
 2. E_{AS} condition: Starting $T_J = 25^\circ\text{C}$, $V_{DD} = 20\text{V}$, $V_G = 10\text{V}$, $R_G = 25\text{ohm}$, $L = 0.5\text{mH}$, $I_{AS} = 48\text{A}$
 3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$.

Test Circuit

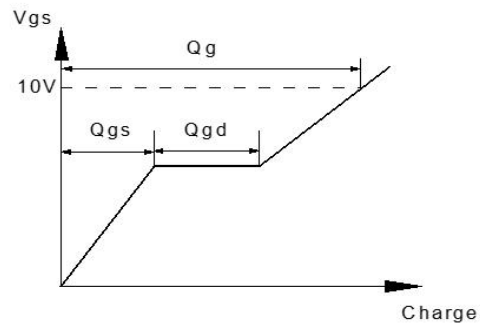
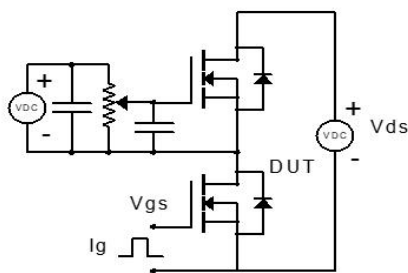


Figure 1: Gate Charge Test Circuit & Waveform

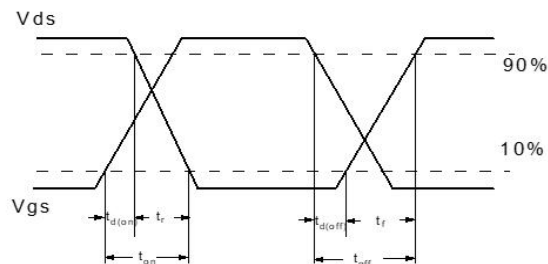
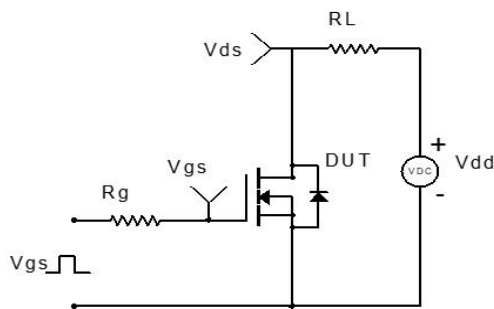


Figure 2: Resistive Switching Test Circuit & Waveform

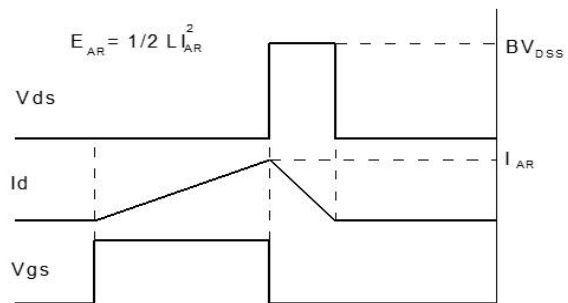
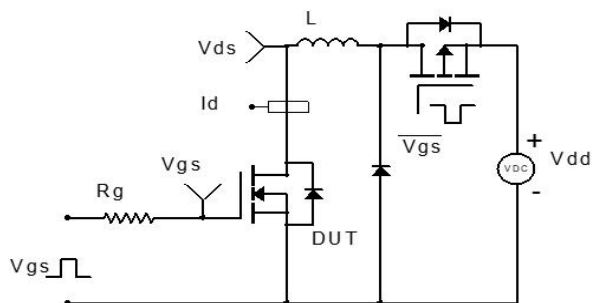


Figure 3: Unclamped Inductive Switching Test Circuit & Waveform

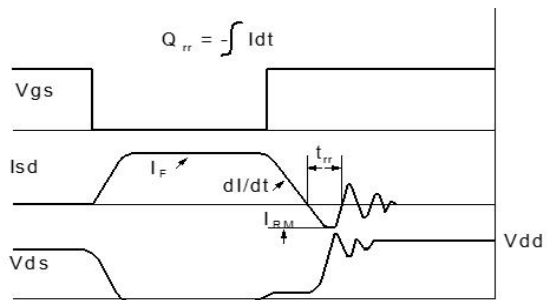
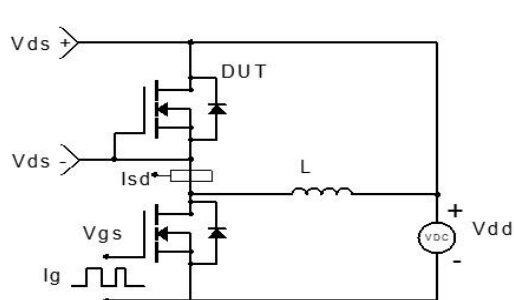
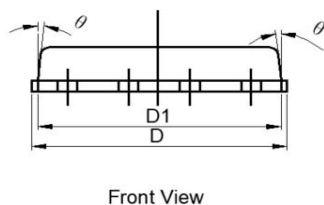
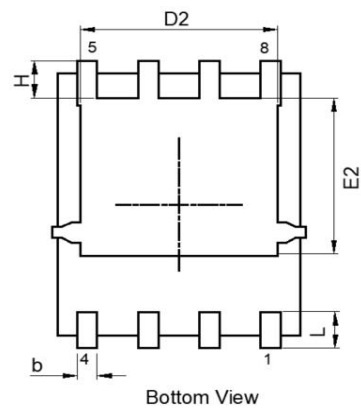
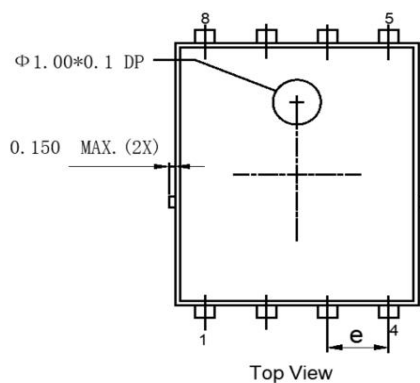


Figure 4: Diode Recovery Test Circuit & Waveform

Package Mechanical Data(PDFN5x6-8L)



DIM.	MILLIMETER		
	MIN.	NOM.	MAX.
A	0.90	1.00	1.10
b	0.31	0.41	0.51
c	0.21	0.25	0.34
D	5.05	5.20	5.40
D1	4.95	5.05	5.15
D2	4.00	4.10	4.20
E	6.30	6.40	6.50
E1	5.75	5.85	5.95
E2	3.43	3.53	3.63
e	1.27BSC		
H	0.73	0.83	0.93
L	0.61	0.71	0.81
θ	0°	--	12°