JS018N03TL8

N-MOSFET PDFN5*6 30V,182A,1.3mΩ

Features

- Uses advanced Trench technology
- Extremely low on-resistance R_{DS}(on)
- Excellent gate charge x R_{DS}(on) product(FOM)

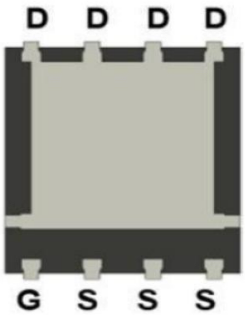
Application

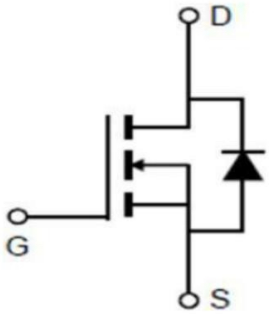
- Motor control and drive
- Battery management
- DC/DC

Product Summary

Package	PDFN5*6
V_{DS}	30V
$R_{DS(on)@VGS=10V}$	1.3mΩ
I_D	182A

Package Marking





Type	Package	Marking	Reel Size	Tape Width	Packing	Qty
JS018N03TL8	PDFN5*6	JS018N03TL8	330*16.5mm	12mm	Reel&Tape	5000

Maximum Ratings (TC=25℃unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous drain current T_c=25℃（Silicon limit） T_c=100℃（Silicon limit）	I_D	 182 115	A
Pulsed Drain Current	I_{DM}	600	A
Maximum Power Dissipation	P_d	83	W
Single pulse avalanche energy	E_{AS}	930	mJ
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 To 150	℃

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Thermal Characteristic

Thermal Resistance,Junction-to-Case	R_{thJC}	1.5	℃/W

Electrical Characteristics (T_C=25℃unless otherwise noted)

Parameter	Symbol	Condition	min	typ	max	Unit
Static Characteristic						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	30	35	-	V
Gate threshold voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=250uA	1.0	1.5	2.2	
Zero gate voltage drain current	I_{DSS}	V_{DS}=30V,V_{GS}=0V	-	-	1	μA
Gate-source leakage current	I_{GSS}	V_{GS}=±20V,V_{DS}=0V	-	-	±100	nA
Drain-source on-state resistance	$R_{DS(on)}$	I_D=20A,V_{GS}=10V	-	1.3	1.8	mΩ
Dynamic Characteristic						
Input Capacitance	C_{iss}	V_{DS}=15V,V_{GS}=0V, f=1MHz	-	7976	-	pF
Output Capacitance	C_{oss}		-	896	-	
Reverse Transfer Capacitance	C_{rss}		-	740	-	
Gate resistance	Rg	f=1MHz		1.8		Ω
Gate Total Charge	Q_G	V_{DS}=15V,I_D=19A, V_{GS}=10V	-	165	-	nC
Gate-Source charge	Q_{gs}		-	29	-	
Gate-Drain charge	Q_{gd}		-	29	-	
Turn-on delay time	$t_{d(on)}$	V_{GS}=10V, V_{DS}=15V, R_G=2.5Ω	-	16	-	ns
Rise time	t_r		-	44	-	
Turn-off delay time	$t_{d(off)}$		-	130	-	
Fall time	t_f		-	71	-	

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Body Diode Characteristic						
Diode Forward Voltage	V_{SD}	V_{GS}=0V,I_S=19A	-	-	1.2	v
Reverse Recovery Time	t_{rr}	I_F =19A di/dt = 100A/μs	-	23	-	ns
Reverse Recovery Charge	Q_{rr}		-	12	-	nC

Typical Performance Characteristics

Fig 1: Output Characteristics

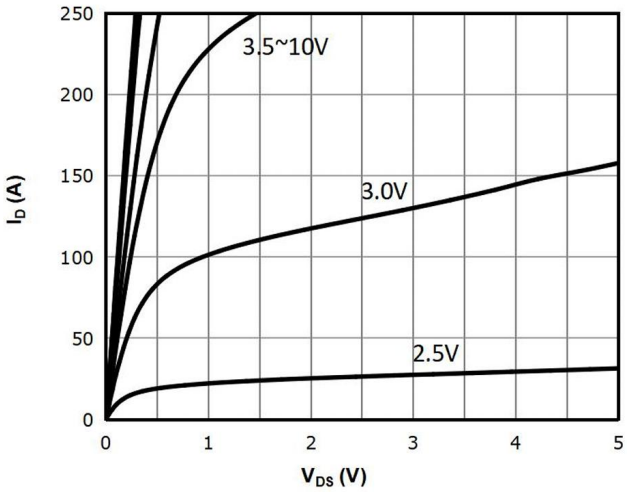

Fig 2: Transfer Characteristics

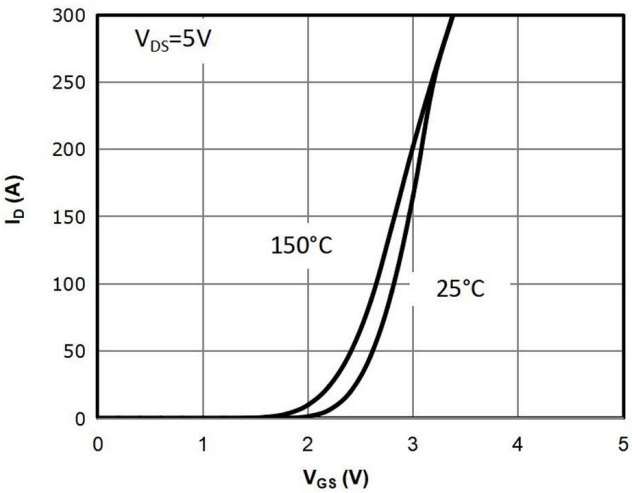

Fig 3: Rds(on) vs Drain Current

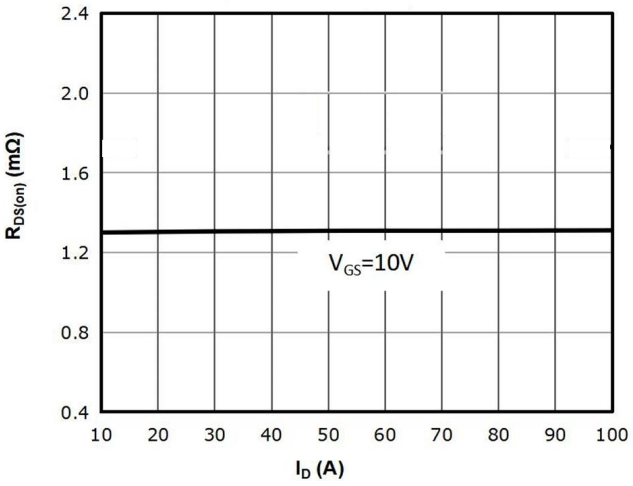

Fig 4: Rds(on) vs Gate Voltage

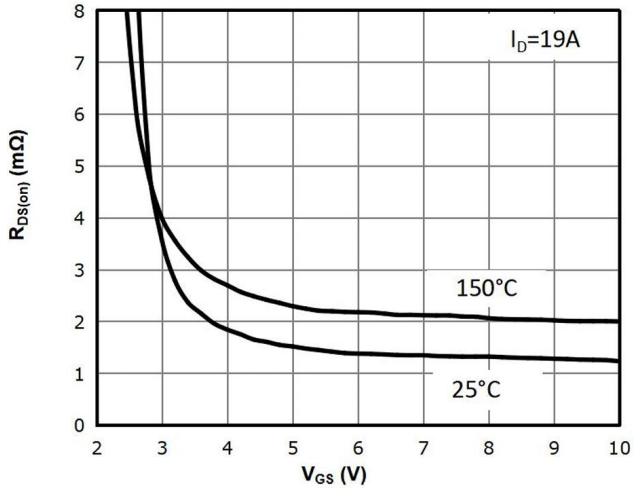

Fig 5: Rds(on) vs. Temperature

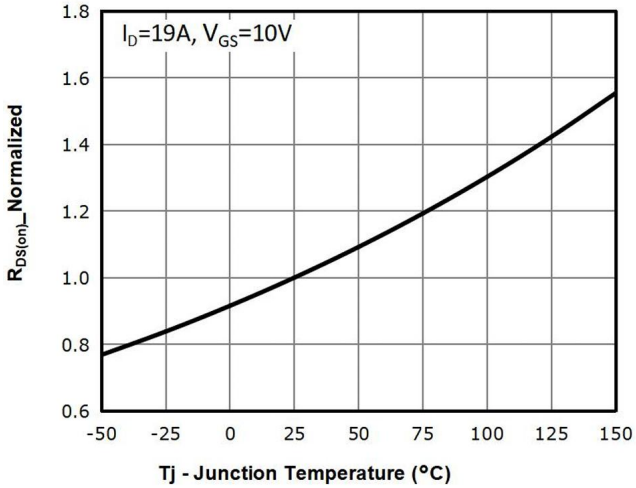

Fig 6: Vgs(th) vs. Temperature

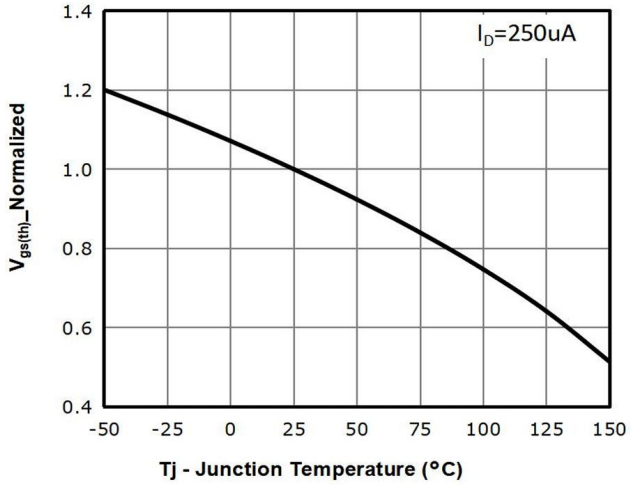

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Fig 7: BVdss vs. Temperature

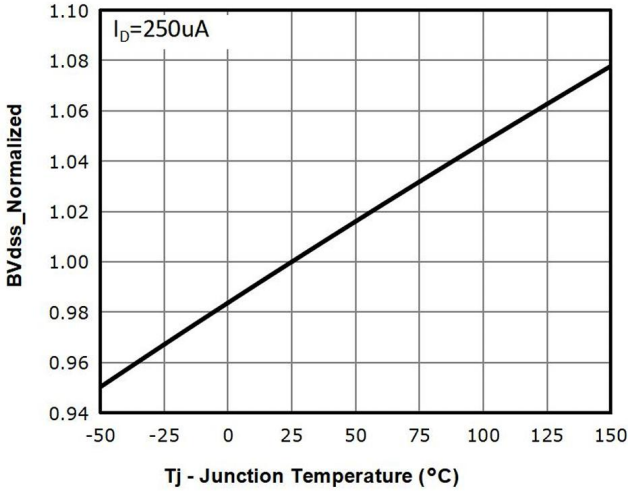

Fig 8: CapacitanceCharacteristics

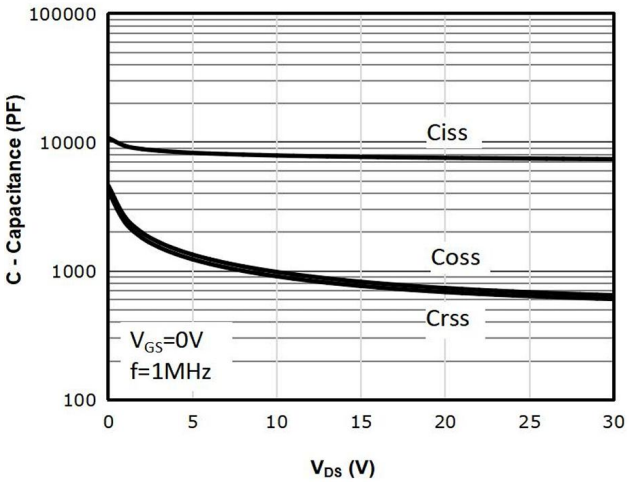

Fig 9: Gate Charge Characteristics

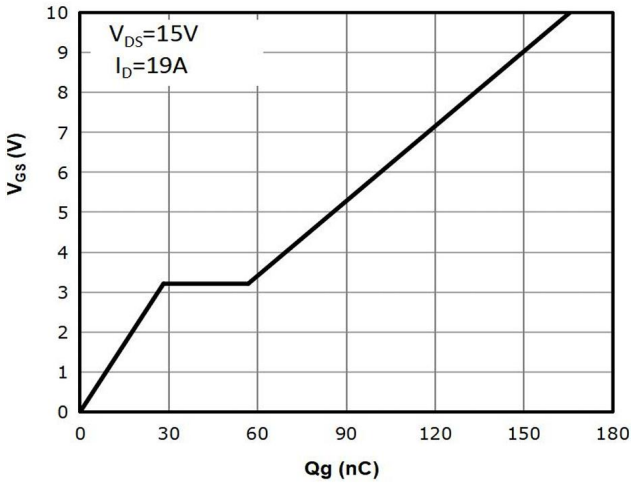

Fig 10: Body-diode Forward Characteristics

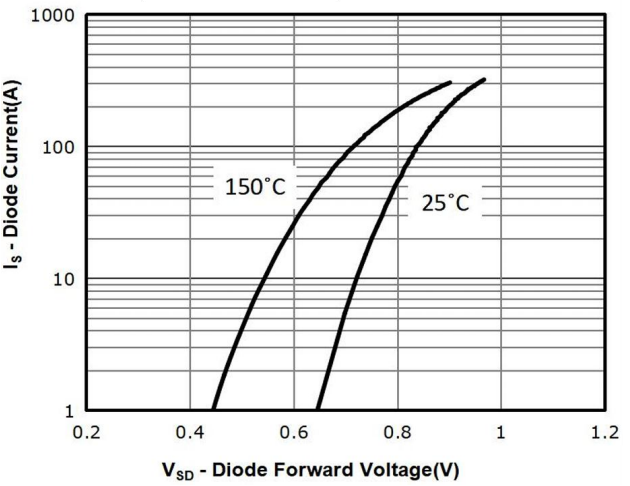

Fig 11: Power Dissipation

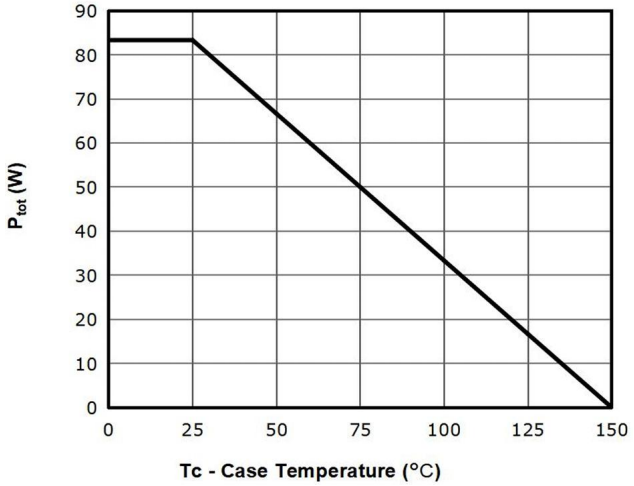

Fig 12: Drain Current Derating

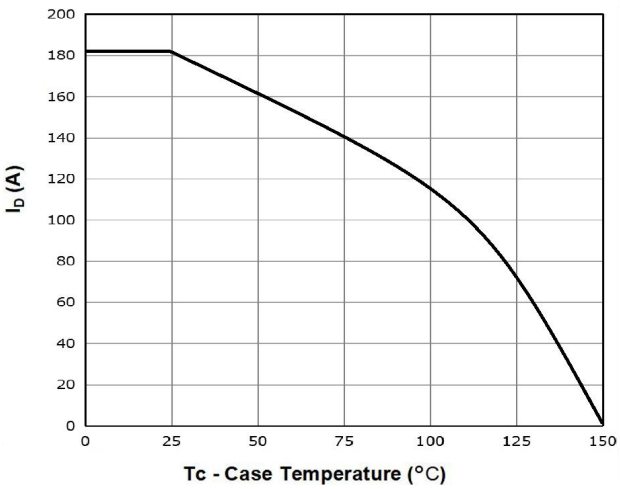

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Fig 13: Safe Operating Area

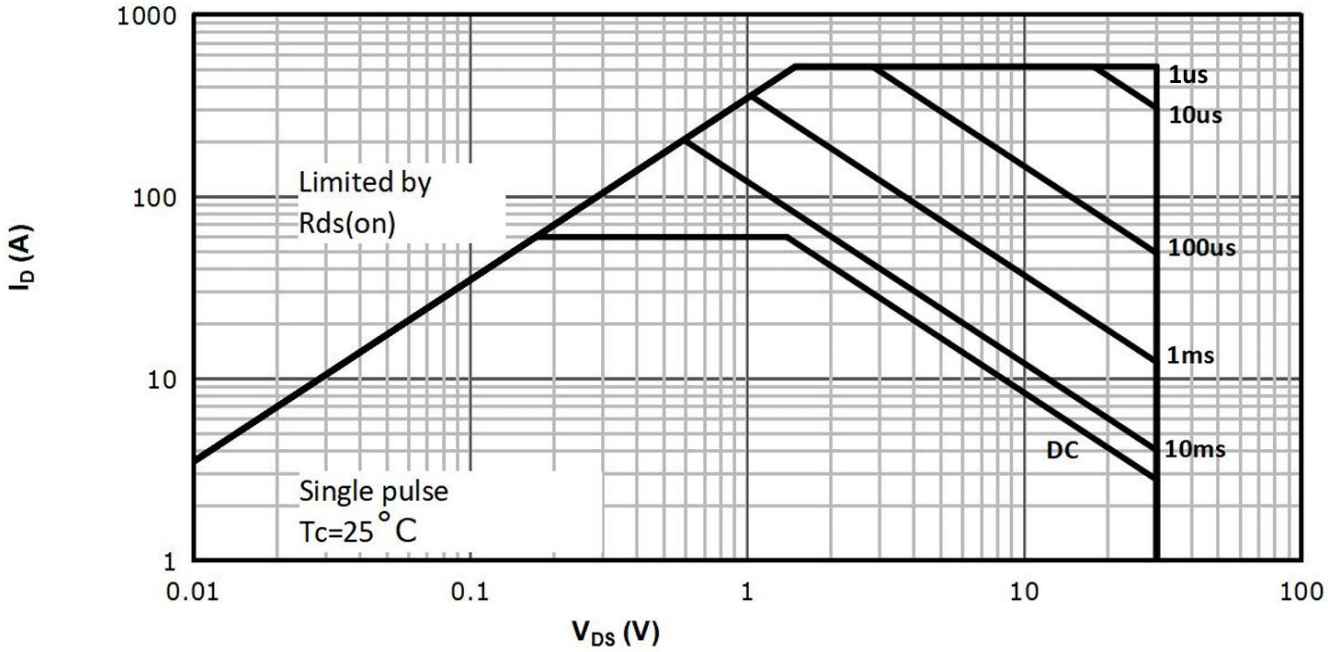
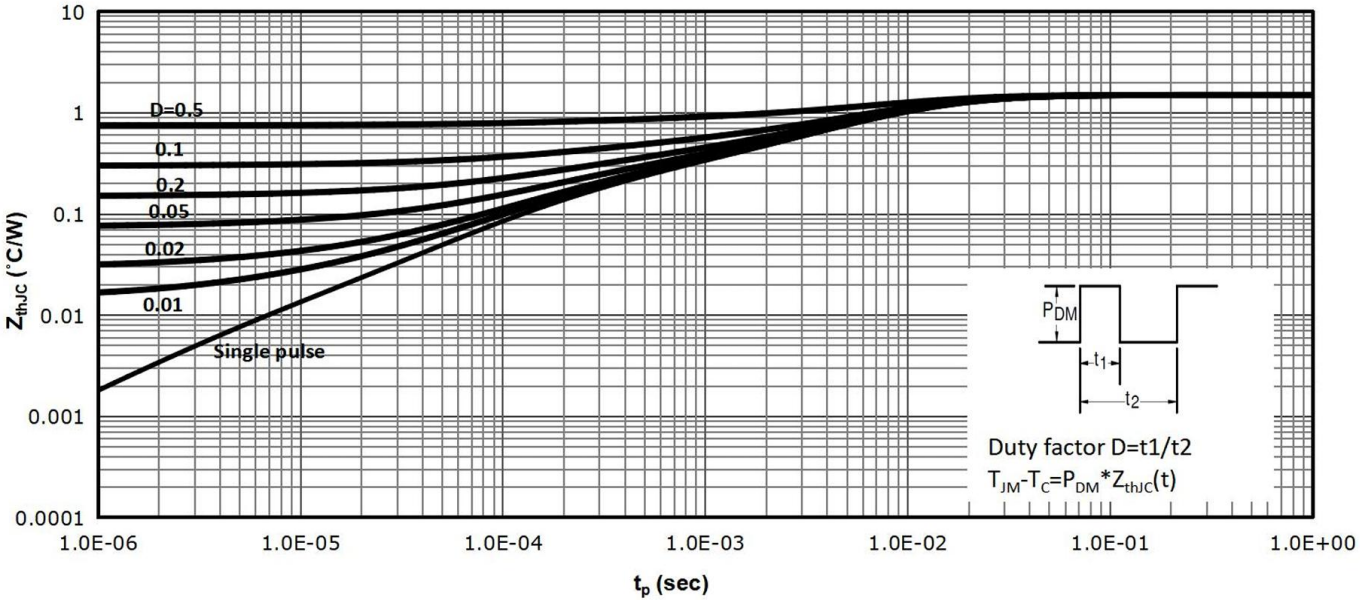


Fig 14: Max. Transient Thermal Impedance



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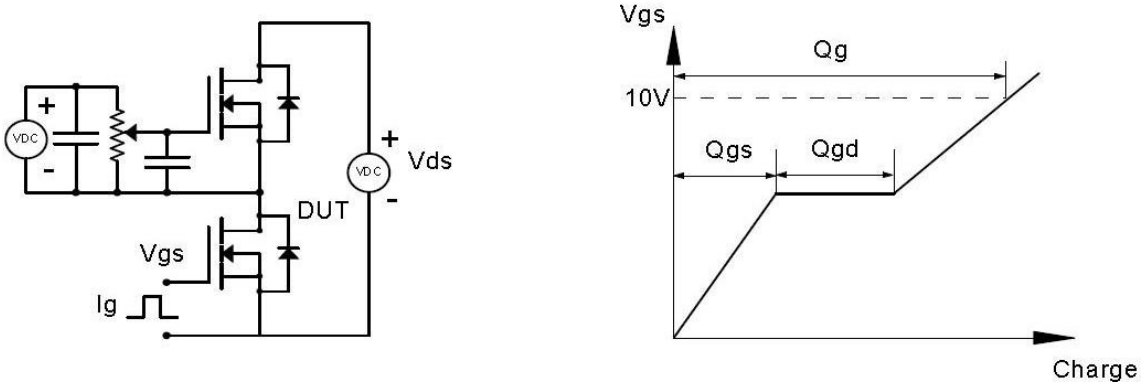
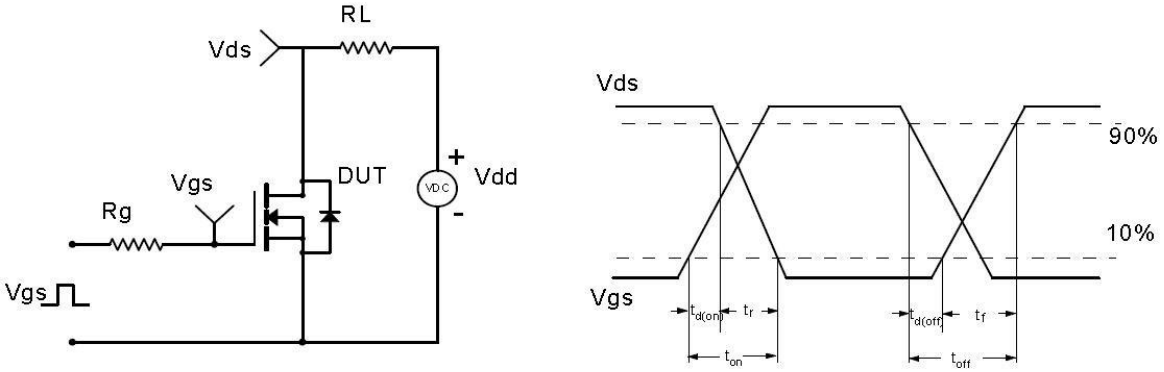
Test Circuit & Waveform

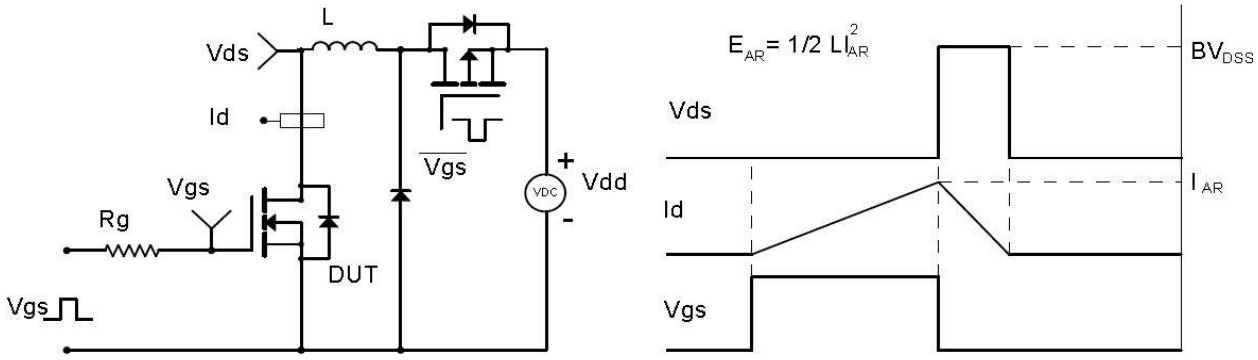
Gate Charge Test Circuit & Waveform



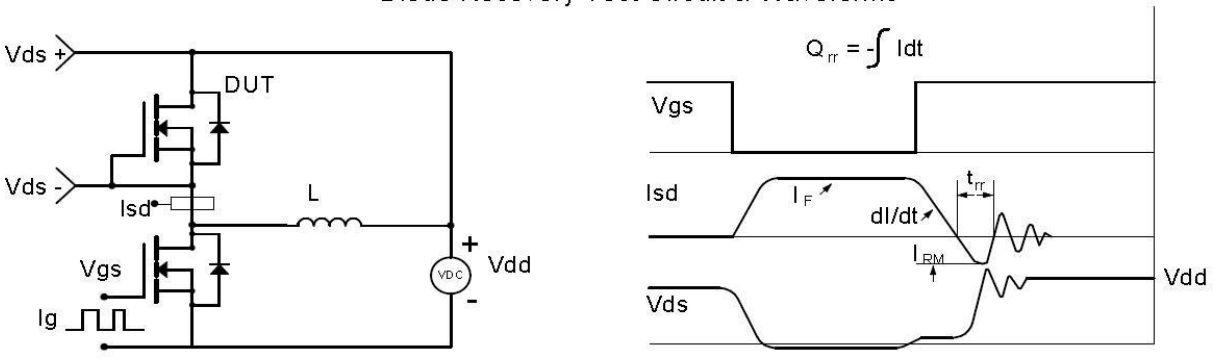
Resistive Switching Test Circuit & Waveforms



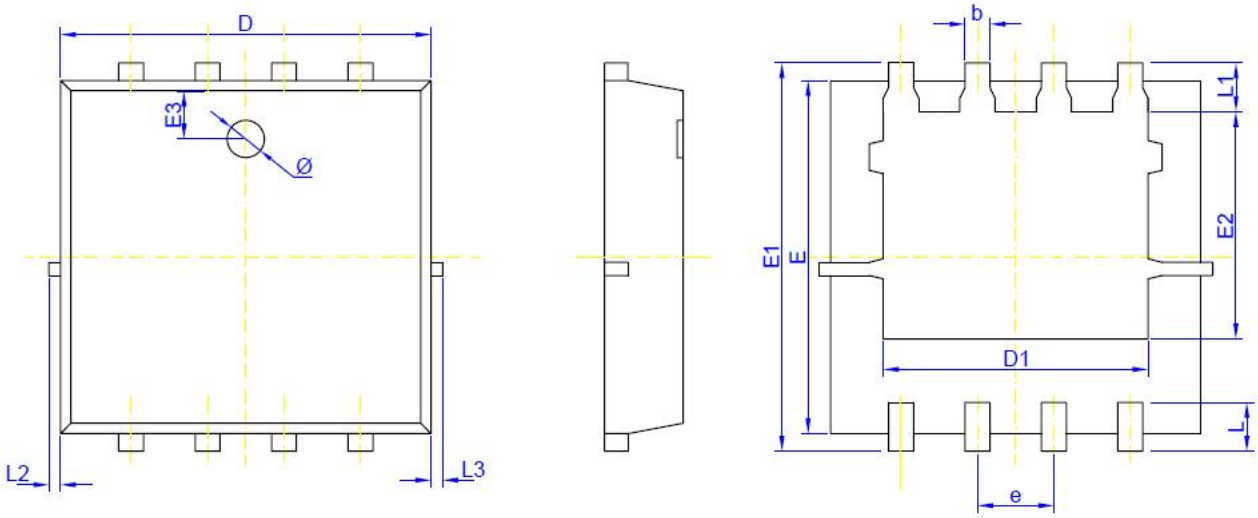
Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Package Outline:PDFN5*6



Dimensions In Millimeters			
Symbol	Min.	Max.	Ave.
A	0.900	1.100	1.000
D	4.950	5.150	5.050
D1	3.850	4.250	4.050
E	5.750	5.950	5.850
E1	5.950	6.350	6.150
E2	3.300	3.700	3.500
E3	0.900	1.300	1.100
b	0.250	0.350	0.300
e	1.220	1.320	1.270
L	0.585	0.785	0.685
L1	0.525	0.725	0.625
Ø	1.000	1.400	1.200
L2	0~0.100		
L3	0~0.100		

注:
1.未注公差±0.05,未标注圆角Rmax=0.25
2.标注单位mm

Revision History:

Revision	Date	Major changes
1.0	2024/3/4	Release of Preliminary version.
2.0	2025/7/18	Update R_{thJC} and I_D.
3.0	2025/8/13	Release of official version.