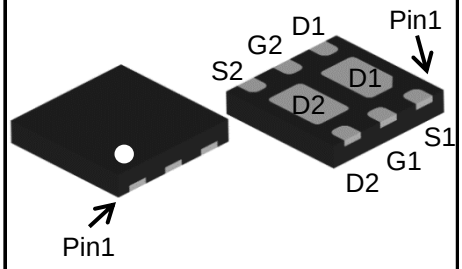
KS2468UA2

Dual N-Channel Advanced Power MOSFET

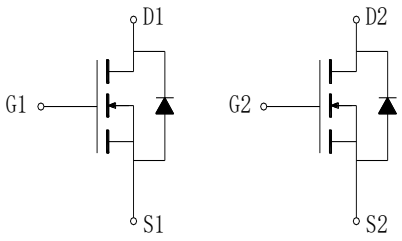
Features

- 20V/6A,
  $R_{DS(ON)}$ =26mΩ(Typ.)@V_{GS}=4.5V
  $R_{DS(ON)}$ =36mΩ(Typ.)@V_{GS}=2.5V
- Low $R_{DS(ON)}$
- Super High Dense Cell Design
- Reliable and Rugged

Pin Description



SDFN2020 DP1



Dual N-Channel MOSFET

Applications

- Power Management
- Battery Protection

RoHS Pb HF Halogen-Free

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T_A=25°C Unless Otherwise Noted)				
V_{DSS}	Drain-Source Voltage		20	V
V_{GSS}	Gate-Source Voltage		±12	
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_S	Diode Continuous Forward Current	T_A=25°C	2.4	A
Mounted on Large Heat Sink				
I_{DP} ①	300μs Pulse Drain Current Tested	T_A=25°C	24	A
I_D ②	Continuous Drain Current(V_{GS}=4.5V)	T_A=25°C	6	A
		T_A=70°C	4.8	
P_D	Maximum Power Dissipation	T_A=25°C	2.1	W
		T_A=70°C	1.3	
$R_{\theta JC}$	Thermal Resistance-Junction to Case		25	°C/W
$R_{\theta JA}$ ③	Thermal Resistance-Junction to Ambient		60	°C/W
Drain-Source Avalanche Ratings				
E_{AS} ④	Avalanche Energy, Single Pulsed		TBD	mJ

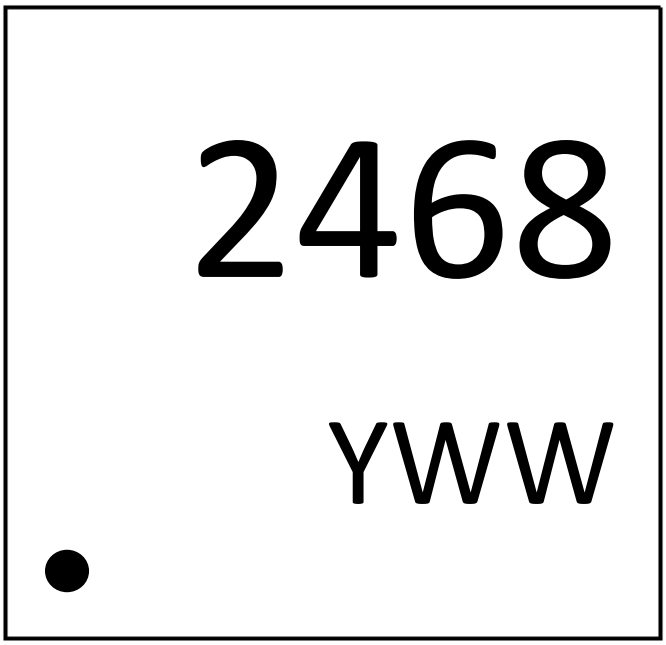
Electrical Characteristics (T_A=25°C Unless Otherwise Noted)

Symbol	Parameter	Test Condition	KS2468UA2			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=250μA	20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=20V, V_{GS}=0V			1	μA
		T_J=125°C			30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250μA	0.5	0.7	1.2	V
I_{GSS}	Gate Leakage Current	V_{GS}=±12V, V_{DS}=0V			±100	nA
$R_{DS(ON)}$ ⑤	Drain-Source On-state Resistance	V_{GS}=4.5V, I_{DS}=3A		26	32	mΩ
		V_{GS}=2.5V, I_{DS}=2A		36	46	mΩ
Diode Characteristics						
V_{SD} ⑤	Diode Forward Voltage	I_{SD}=3A, V_{GS}=0V		0.82	1.2	V
t_{rr}	Reverse Recovery Time	I_{SD}=3A, dI_{SD}/dt=100A/μs		21		ns
Q_{rr}	Reverse Recovery Charge			9		nC
Dynamic Characteristics ⑥						
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,F=1MHz		1.4		Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=10V, Frequency=1.0MHz		600		pF
C_{oss}	Output Capacitance			115		
C_{rss}	Reverse Transfer Capacitance			85		
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=10V, I_{DS}=3A, V_{GEN}=4.5V,R_G=6Ω		14		ns
t_r	Turn-on Rise Time			17		
$t_{d(OFF)}$	Turn-off Delay Time			40		
t_f	Turn-off Fall Time			29		
Gate Charge Characteristics ⑥						
Q_g	Total Gate Charge	V_{DS}=10V, V_{GS}=4.5V, I_{DS}=3A		9.2		nC
Q_{gs}	Gate-Source Charge			1.2		
Q_{gd}	Gate-Drain Charge			2.4		

Notes:
①Pulse width limited by safe operating area.
②Calculated continuous current based on maximum allowable junction temperature.
③When mounted on 1 inch square copper board, t≤10sec. The value in any given application depends on the user's specific board design.
④Limited by $T_{Jmax.}$ Starting T_J = 25°C.
⑤Pulse test;Pulse width≤300μs, duty cycle≤2%.
⑥Guaranteed by design, not subject to production testing.

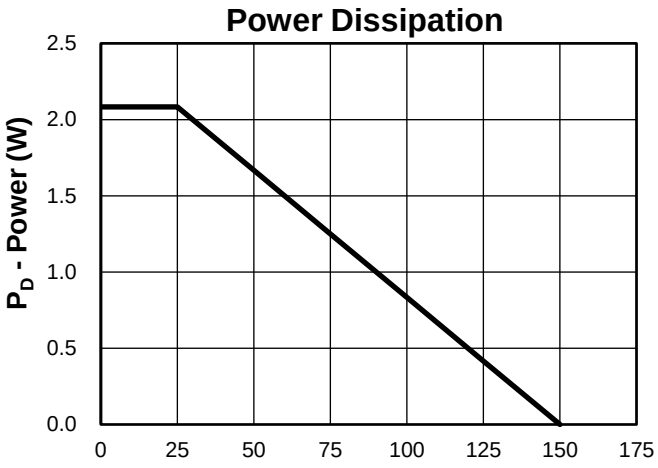
Ordering and Marking Information

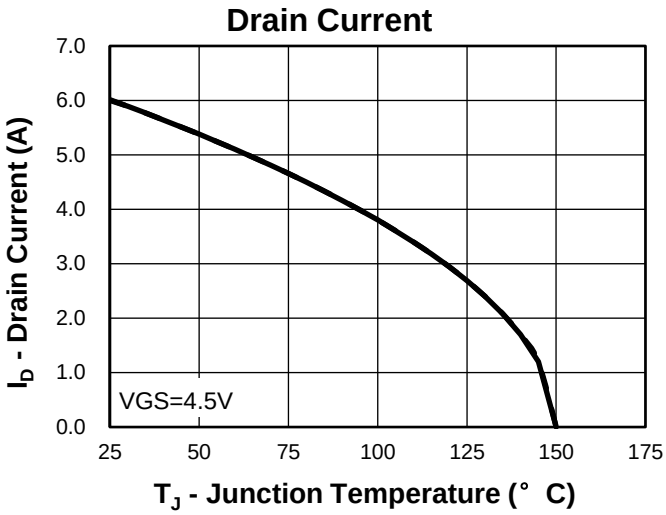
Device	Package	Packaging	Quantity	Reel Size	Tape width
KS2468UA2	SDFN2020 DP1	Tape&Reel	3000	7”	8mm

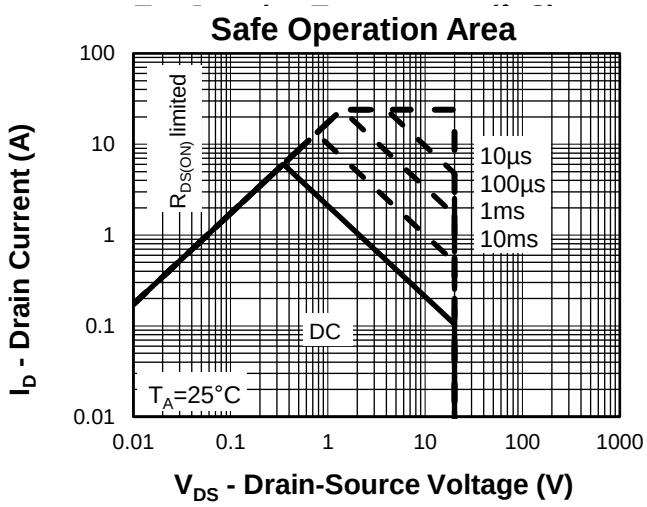


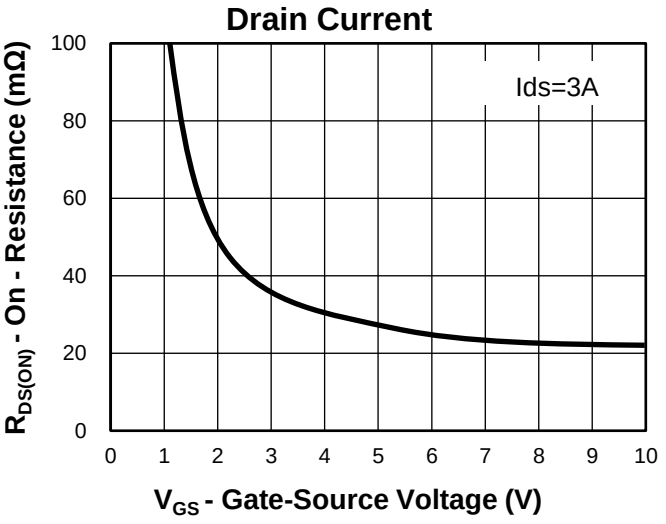
Y =Year,2017-A,2018-B,etc.
WW =Week.

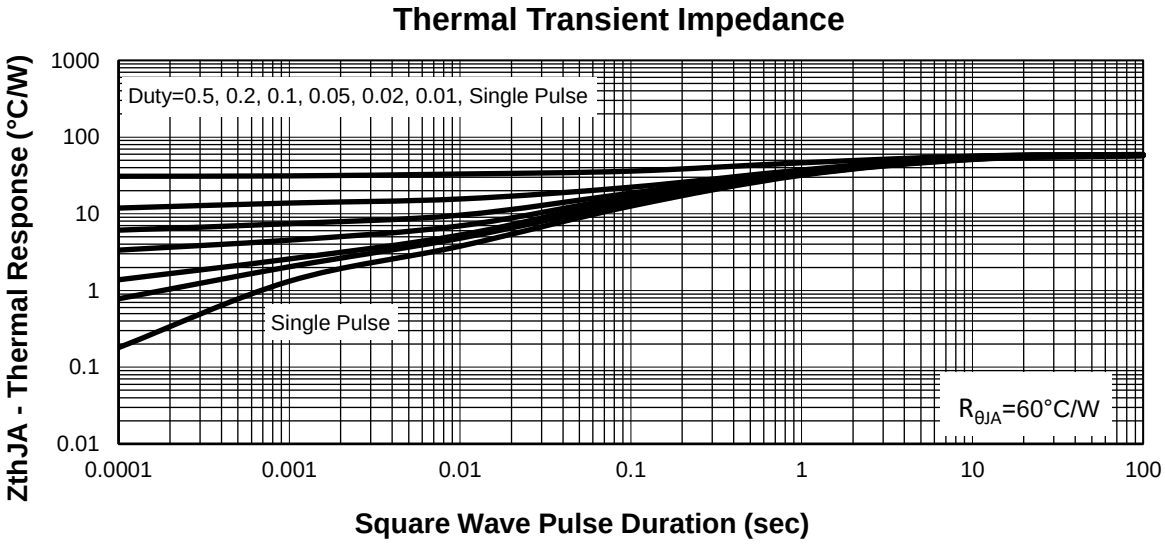
Typical Characteristics





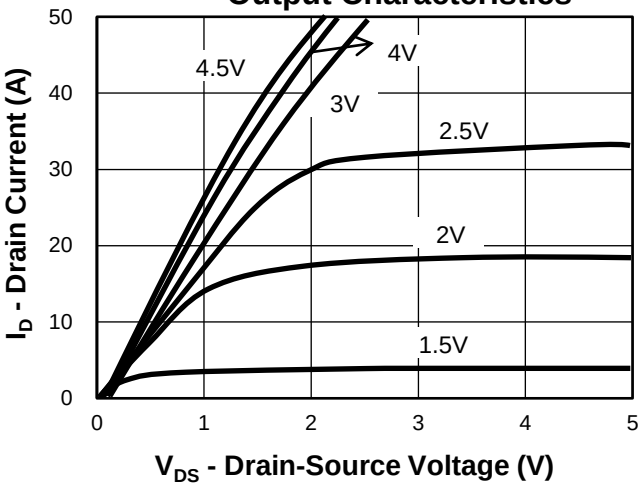




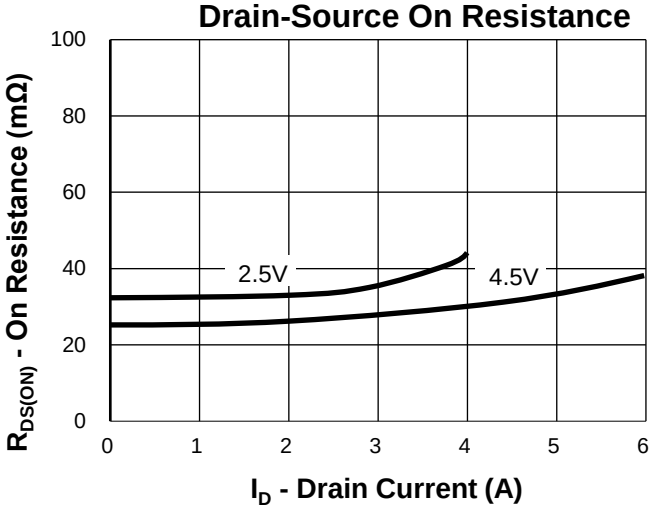


Typical Characteristics

Output Characteristics



Drain-Source On Resistance



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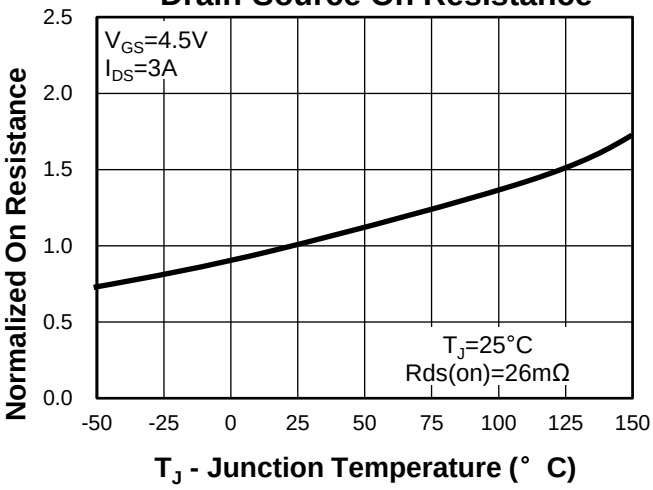
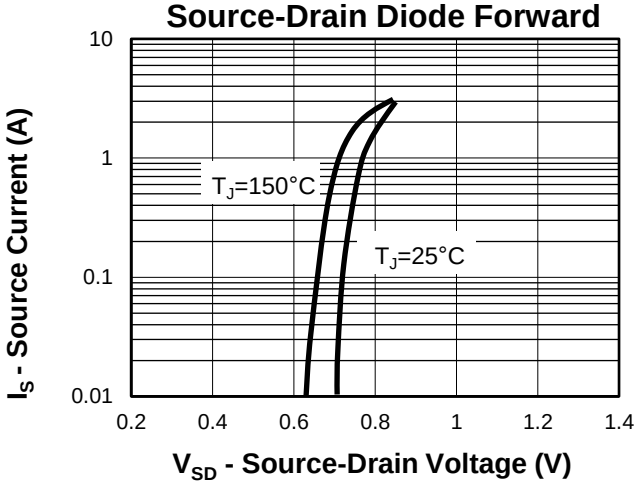
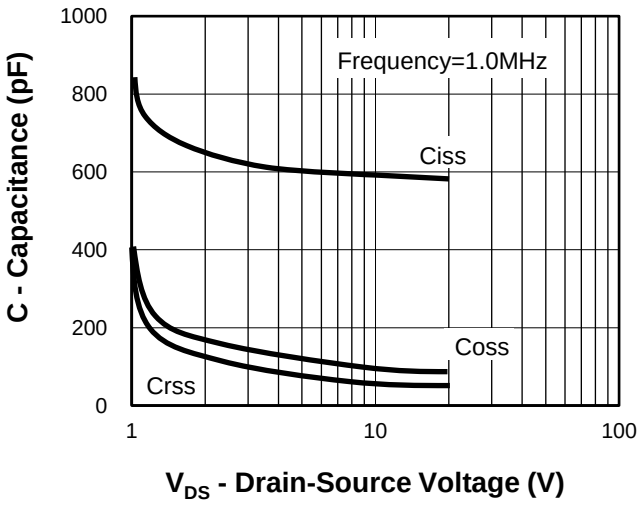


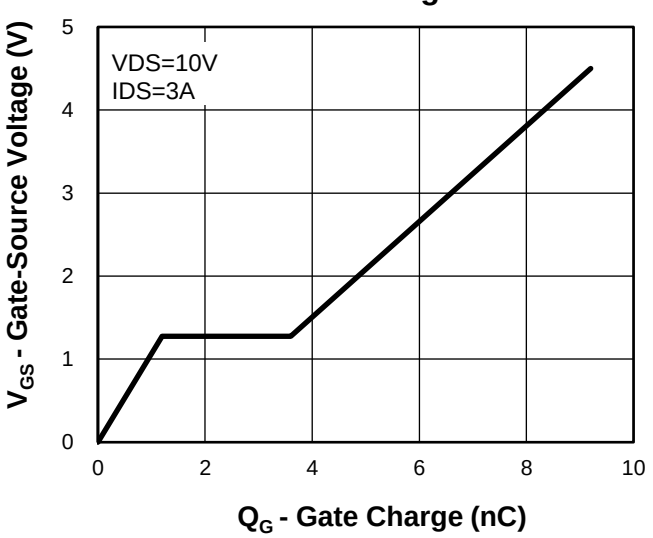
Source-Drain Diode Forward



Capacitance

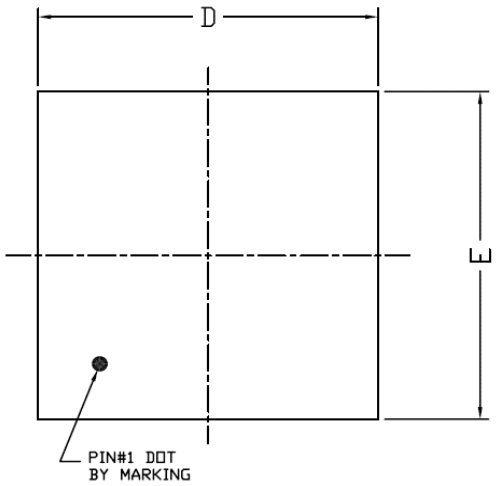


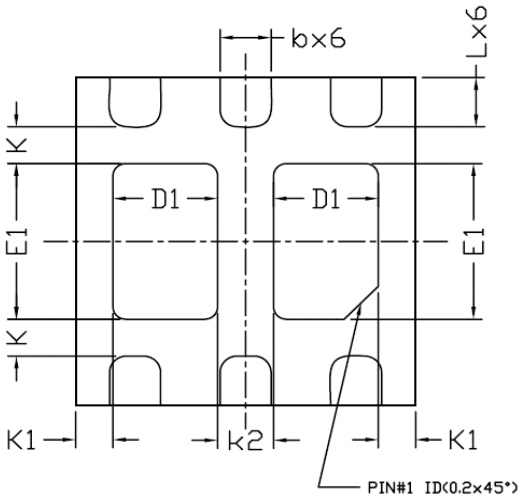
Gate Charge



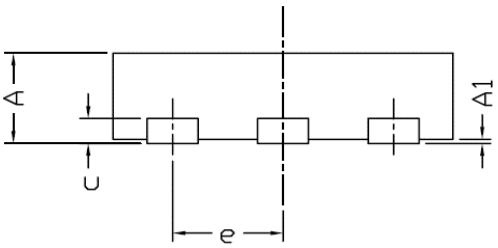
Package Information

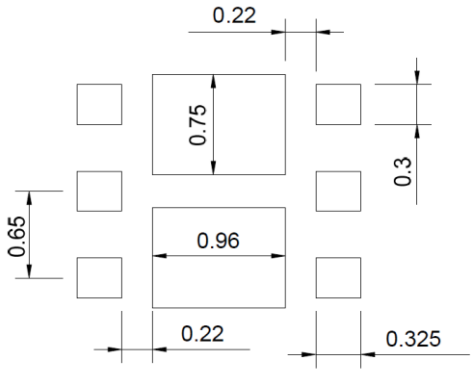
SDFN2020 DP1





BOTTOM VIEW

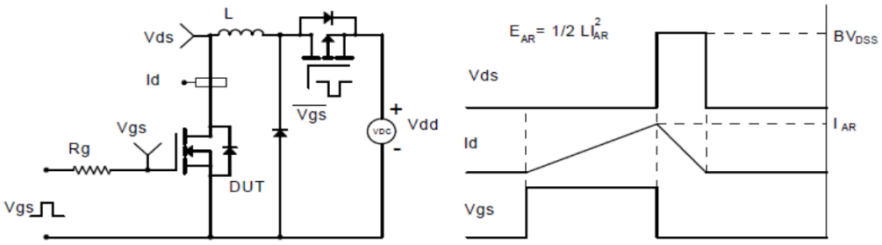




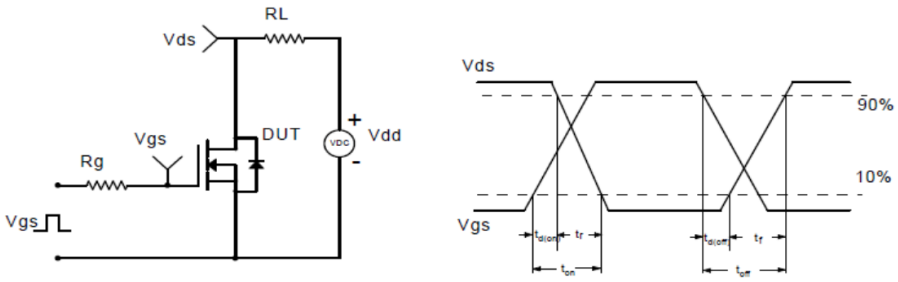
Land Pattern
(Only for Reference)

SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.700	0.750	0.800	0.028	0.030	0.031
A1	0.000	0.020	0.050	0.000	0.001	0.002
b	0.225	0.275	0.325	0.009	0.011	0.013
c	0.203 REF.			0.008 REF.		
D	1.900	2.000	2.100	0.075	0.079	0.083
D1	0.500	0.550	0.600	0.020	0.022	0.024
E	1.900	2.000	2.100	0.075	0.079	0.083
E1	0.850	0.900	0.950	0.033	0.035	0.037
e	0.65 BSC			0.026 BSC		
K	0.25 BSC			0.001 BSC		
K1	0.22 BSC			0.009 BSC		
K2	0.40 BSC			0.016 BSC		
L	0.270	0.320	0.370	0.011	0.013	0.015

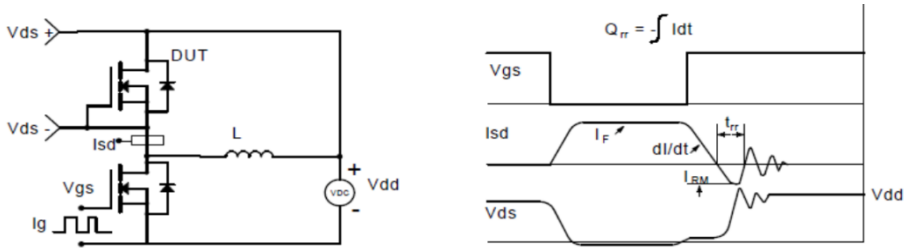
Avalanche Test Circuit and Waveforms



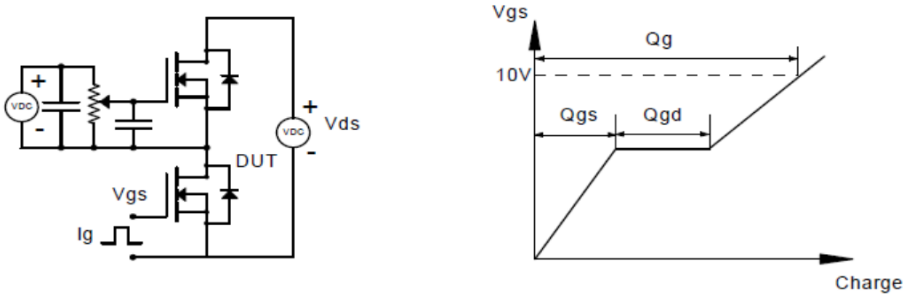
Switching Time Test Circuit and Waveforms



Diode Recovery Test Circuit and Waveforms



Gate Charge Test Circuit and Waveform



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