

این دیتاشیت توسط توکل الکترونیک تهیه و ارائه شده است.
جهت مشاهده قیمت، موجودی و ثبت سفارش این قطعه به وبسایت توکل الکترونیک مراجعه فرمایید.



مشاهده قیمت و خرید
برای خرید و مشاهده سایر محصولات کلیک کنید



KEC

SEMICONDUCTOR
TECHNICAL DATAKF10N68F
N CHANNEL MOS FIELD
EFFECT TRANSISTOR

General Description

This planar stripe MOSFET has better characteristics, such as fast switching time, low on resistance, low gate charge and excellent avalanche characteristics. It is mainly suitable for active power factor correction and switching mode power supplies.

FEATURES

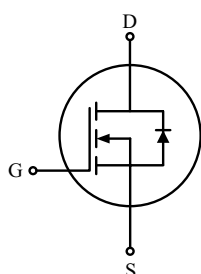
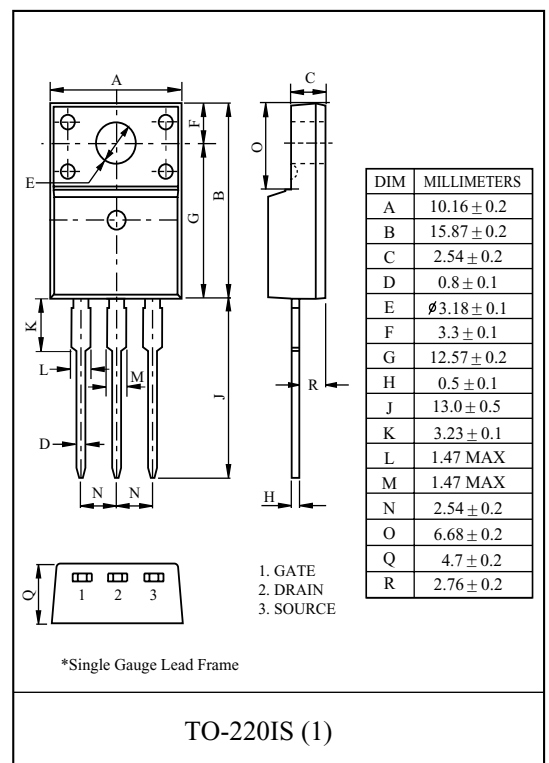
- $V_{DS}=680V$, $I_D=10A$
- Drain-Source ON Resistance :
 $R_{DS(ON)}(Max)=0.95\Omega$ @ $V_{GS}=10V$
- $Q_g(typ.)=24nC$

MAXIMUM RATING ($T_c=25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	680	V
Gate-Source Voltage	V_{GSS}	± 30	V
Drain Current	@ $T_c=25^\circ C$	10*	A
	@ $T_c=100^\circ C$	6*	
	Pulsed (Note1)	25*	
Single Pulsed Avalanche Energy (Note 2)	E_{AS}	360	mJ
Repetitive Avalanche Energy (Note 1)	E_{AR}	10.5	mJ
Peak Diode Recovery dv/dt (Note 3)	dv/dt		V/ns
Drain Power Dissipation	$T_c=25^\circ C$	46	W
	Derate above $25^\circ C$	0.37	W/ $^\circ C$
Maximum Junction Temperature	T_j	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 150	$^\circ C$
Thermal Characteristics			
Thermal Resistance, Junction-to-Case	R_{thJC}	2.7	$^\circ C/W$
Thermal Resistance, Junction-to-Ambient	R_{thJA}	62.5	$^\circ C/W$

* : Drain current limited by maximum junction temperature.

PIN CONNECTION



KF10N68F

ELECTRICAL CHARACTERISTICS (Tc=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250 μA, V _{GS} =0V	680	-	-	V
Breakdown Voltage Temperature Coefficient	Δ BV _{DSS} / Δ T _j	I _D =250 μA, Referenced to 25°C	-	0.65	-	V/°C
Drain Cut-off Current	I _{DSS}	V _{DS} =680V, V _{GS} =0V	-	-	10	μA
Gate Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =250 μA	2.5	-	4.5	V
Gate Leakage Current	I _{GSS}	V _{GS} =± 30V, V _{DS} =0V	-	-	± 100	nA
Drain-Source ON Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =5A	-	0.76	0.95	Ω
Dynamic						
Total Gate Charge	Q _g	V _{DS} =520V, I _D =10A V _{GS} =10V (Note4,5)	-	24	-	nC
Gate-Source Charge	Q _{gs}		-	6	-	
Gate-Drain Charge	Q _{gd}		-	8	-	
Turn-on Delay time	t _{d(on)}	V _{DD} =325V I _D =10A R _G =25Ω (Note4,5)	-	32	-	ns
Turn-on Rise time	t _r		-	35	-	
Turn-off Delay time	t _{d(off)}		-	88	-	
Turn-off Fall time	t _f		-	30	-	
Input Capacitance	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1.0MHz	-	1350	-	pF
Output Capacitance	C _{oss}		-	140	-	
Reverse Transfer Capacitance	C _{rss}		-	13	-	
Source-Drain Diode Ratings						
Continuous Source Current	I _S	V _{GS} <V _{th}	-	-	10	A
Pulsed Source Current	I _{SP}		-	-	40	
Diode Forward Voltage	V _{SD}	I _S =10A, V _{GS} =0V	-	-	1.4	V
Reverse Recovery Time	t _{rr}	I _S =10A, V _{GS} =0V,	-	400	-	ns
Reverse Recovery Charge	Q _{rr}	dI _S /dt=100A/μs	-	4.7	-	μC

Note 1) Repetivity rating : Pulse width limited by junction temperature.

Note 2) $L=6.8mH$, $I_S=10A$, $V_{DD}=50V$, $R_G=25\Omega$, Starting $T_j=25^\circ C$.

Note 3) $I_S \leq 10A$, $dI/dt \leq 200A/\mu s$, $V_{DD} \leq BV_{DSS}$, Starting $T_j=25^\circ C$.

Note 4) Pulse Test : Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

Note 5) Essentially independent of operating temperature.

Marking

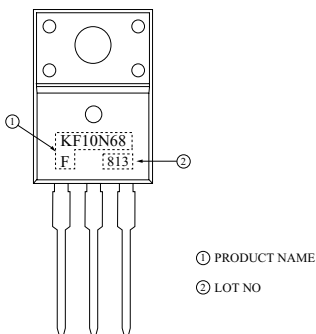


Fig1. $I_D - V_{DS}$

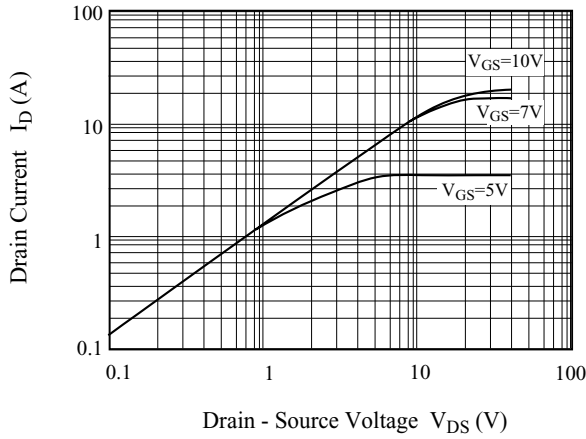


Fig2. $I_D - V_{GS}$

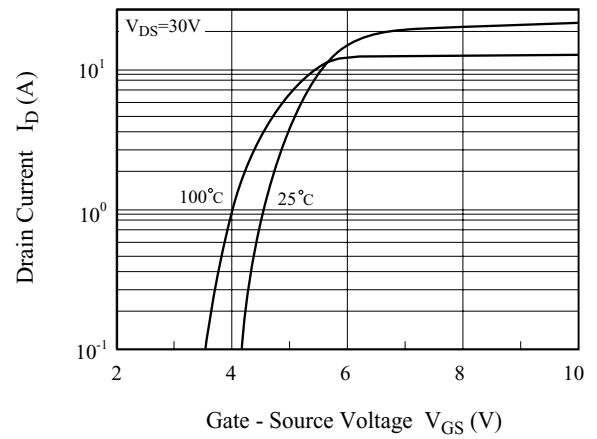


Fig3. $BV_{DSS} - T_j$

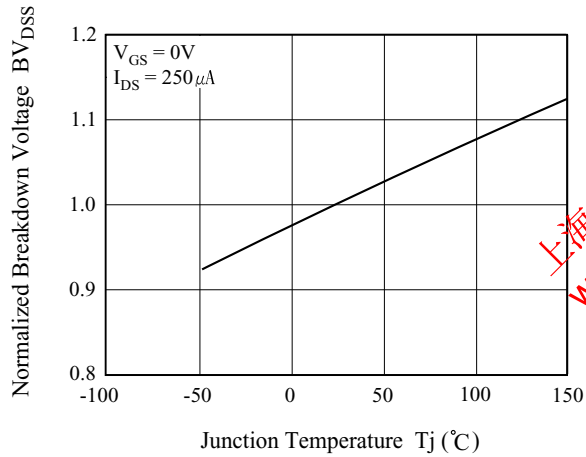


Fig4. $R_{DS(ON)} - I_D$

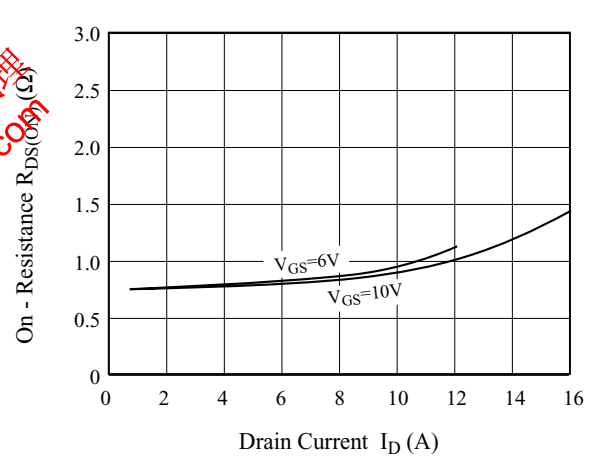


Fig5. $I_S - V_{SD}$

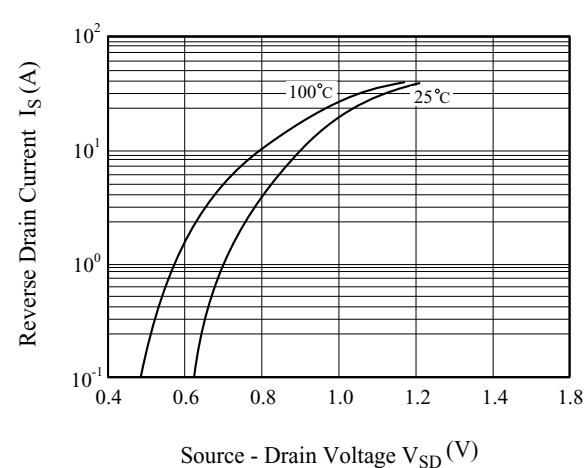
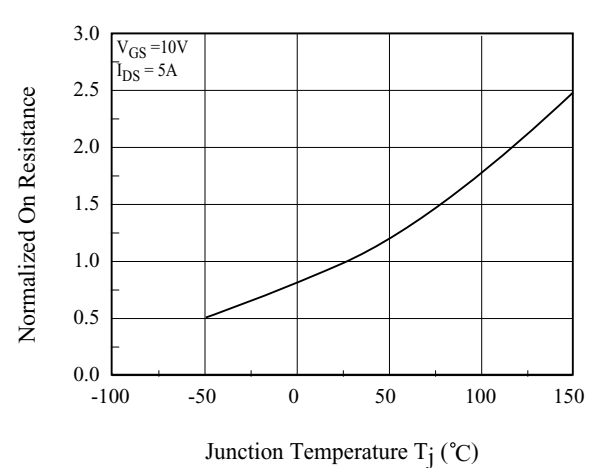


Fig6. $R_{DS(ON)} - T_j$



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Fig 7. C - V_{DS}

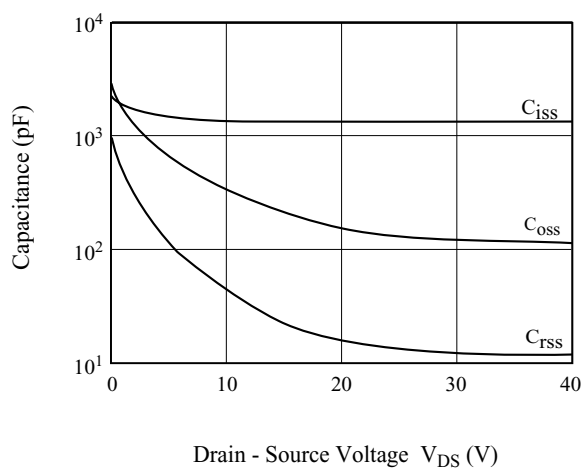


Fig8. Q_g - V_{GS}

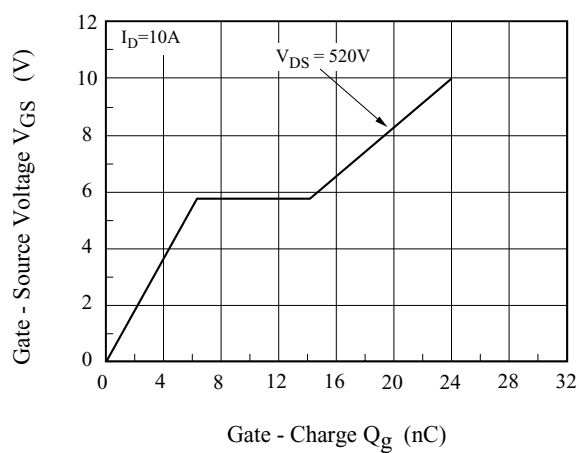


Fig9. Safe Operation Area

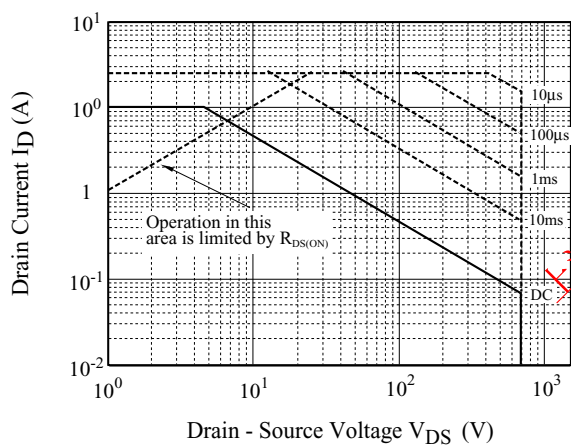


Fig10. Transient Thermal Response Curve

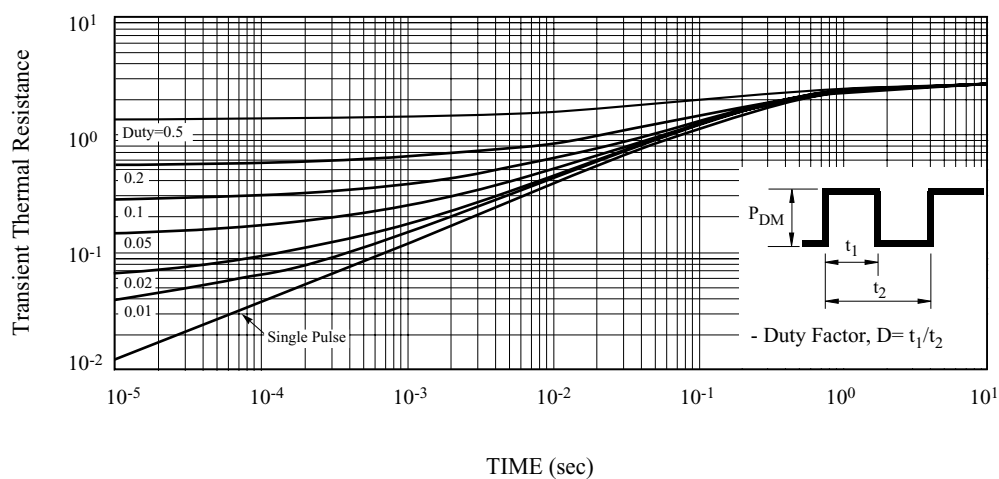


Fig11. Gate Charge

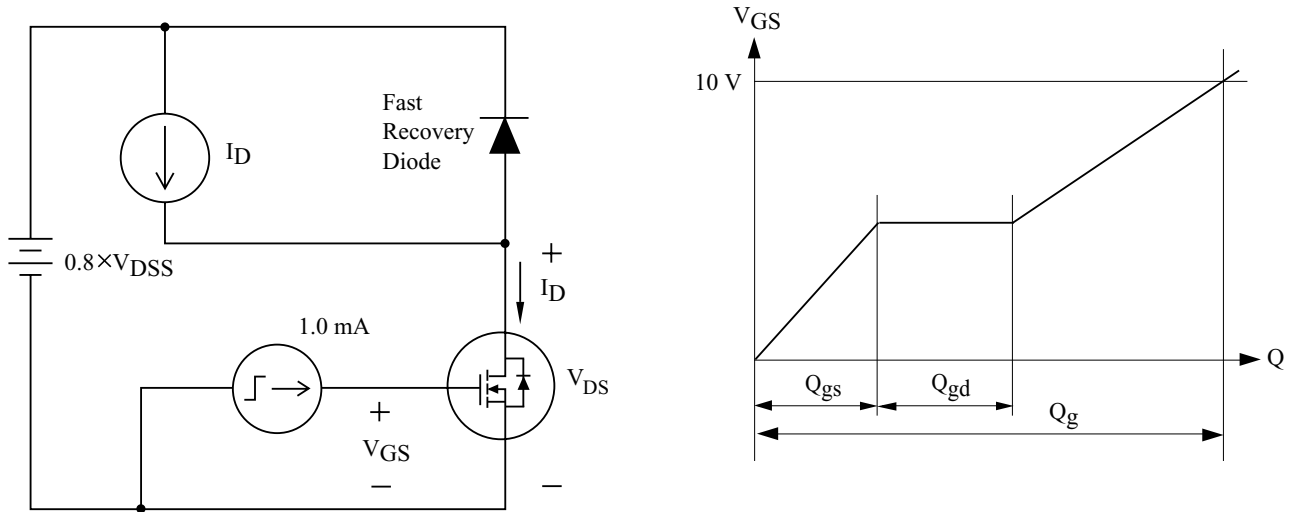


Fig12. Single Pulsed Avalanche Energy

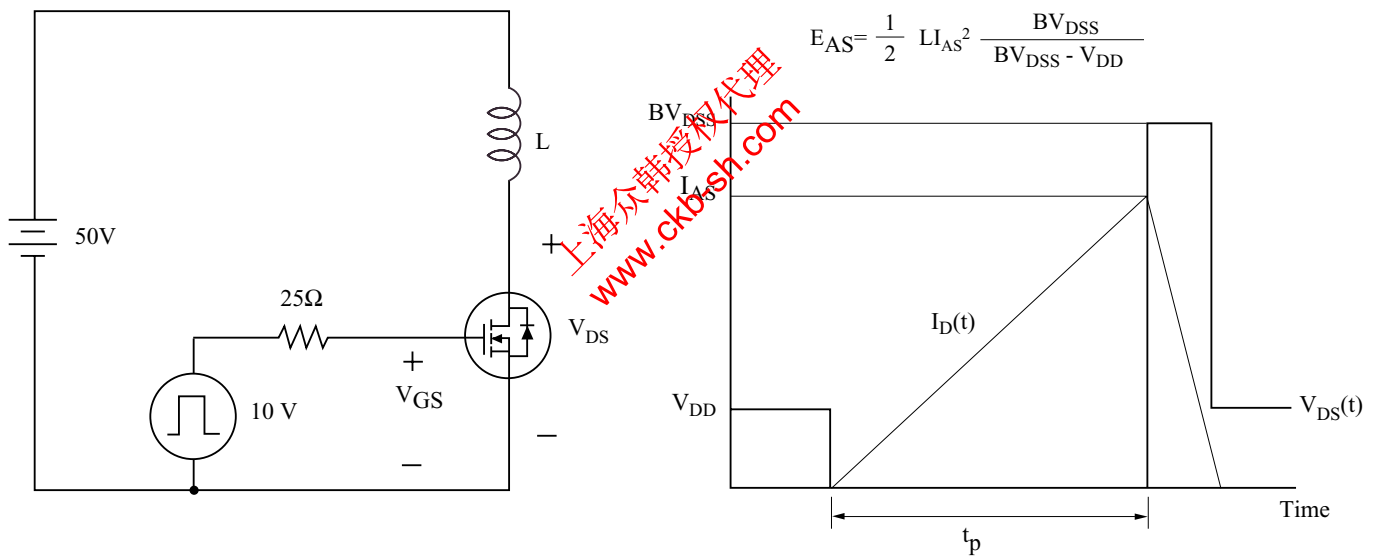


Fig13. Resistive Load Switching

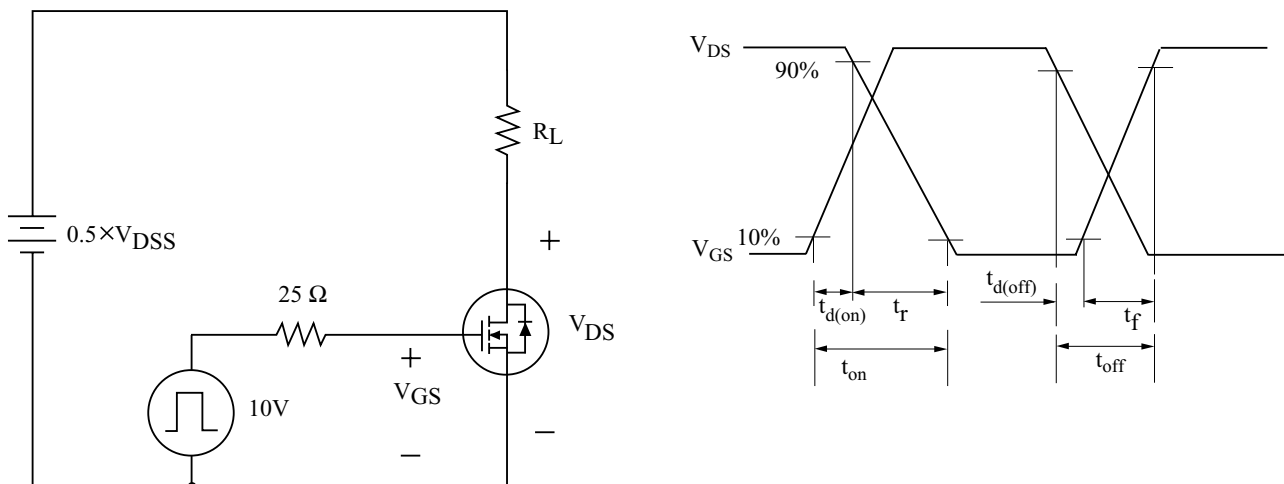
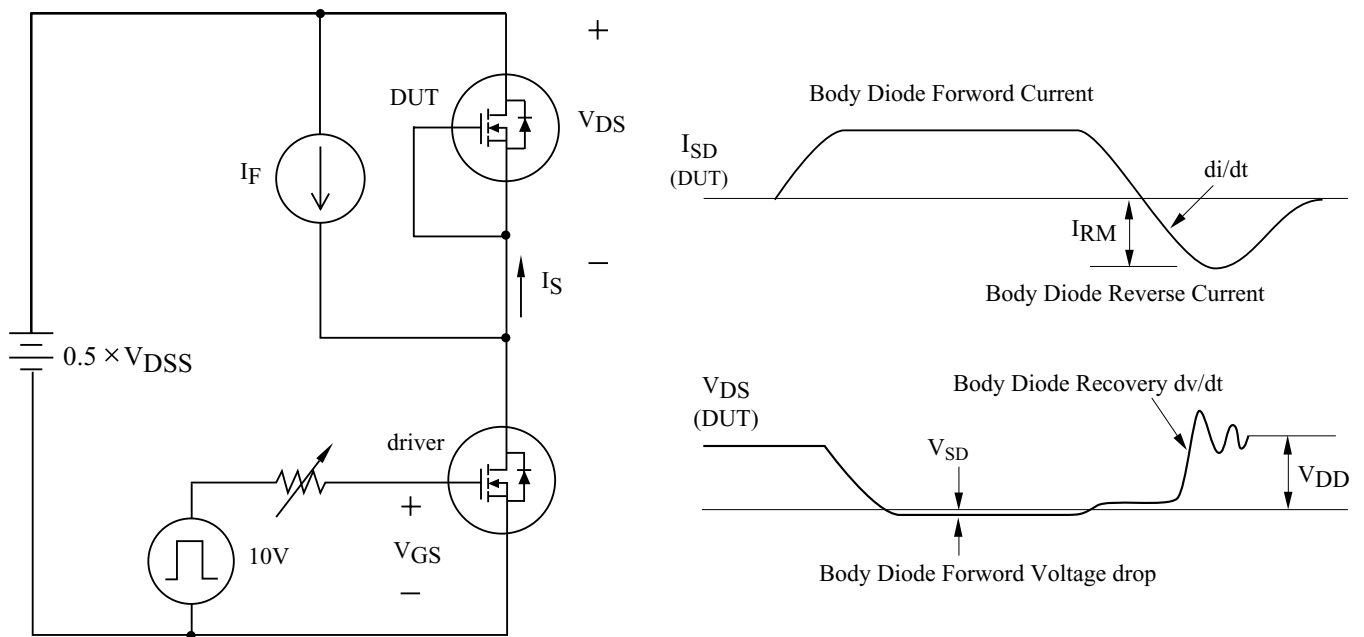


Fig14. Source - Drain Diode Reverse Recovery and dv/dt



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