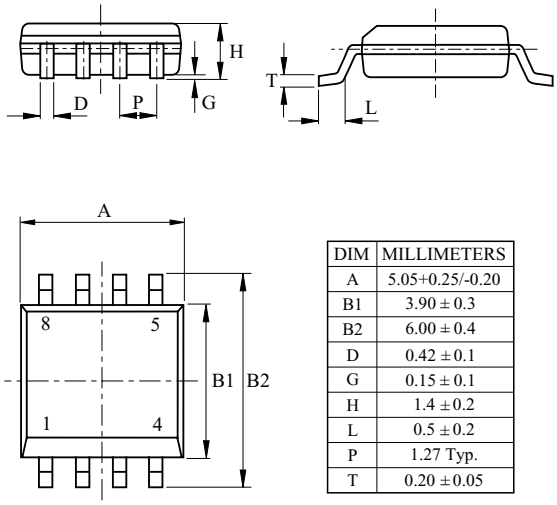
General Description

Switching regulator and DC-DC Converter applications.
It s mainly suitable for power management in PC,
portable equipment and battery powered systems.



DIM	MILLIMETERS
A	5.05+0.25/-0.20
B1	3.90 ± 0.3
B2	6.00 ± 0.4
D	0.42 ± 0.1
G	0.15 ± 0.1
H	1.4 ± 0.2
L	0.5 ± 0.2
P	1.27 Typ.
T	0.20 ± 0.05

FLP-8 (1)

FEATURES

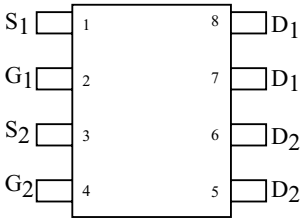
· N-Channel
: V_{DSS}=30V, I_D=5.5A.
: $R_{DS(ON)}$=40mΩ (Max.) @ V_{GS}=10V
: $R_{DS(ON)}$=50mΩ (Max.) @ V_{GS}=4.5V
· P-Channel
: V_{DSS}=-30V, I_D=-4.5A.
: $R_{DS(ON)}$=55mΩ (Max.) @ V_{GS}=-10V
: $R_{DS(ON)}$=85mΩ (Max.) @ V_{GS}=-4.5V
· Super High Dense Cell Design.
· Reliable and rugged.

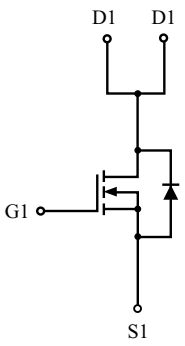
MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	N-Ch	P-Ch	UNIT
Drain-Source Voltage		V_{DSS}	30	-30	V
Gate-Source Voltage		V_{GSS}	±20	±20	V
Drain Current	DC	I_D*	5.5	-4.5	A
	Pulsed (Note1)	I_{DP}	23	-18	
Source-Drain Diode Current		I_S	1.7	-1.7	A
Drain Power Dissipation		P_D*	2		W
Maximum Junction Temperature		T_j	150		℃
Storage Temperature Range		T_{stg}	-55 ~ 150		℃
Thermal Resistance, Junction to Ambient		R_{thJA}	62.5		℃/W

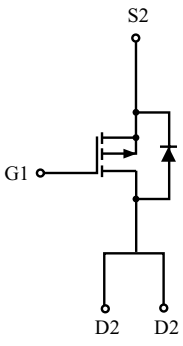
* : Surface Mounted on FR4 Board, t≤10sec.

PIN CONNECTION (TOP VIEW)





N-Channel MOSFET



P-Channel MOSFET

ELECTRICAL CHARACTERISTICS (Ta=25℃)

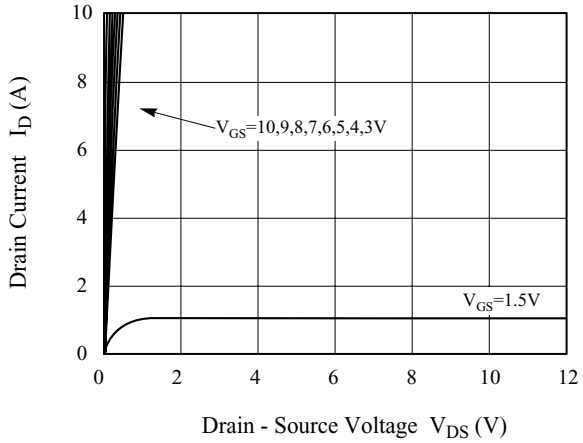
CHARACTERISTIC	SYMBOL	TEST CONDITION		MIN.	TYP.	MAX.	UNIT
Static							
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250㎂, V_{GS}=0V	N-Ch	30	-	-	V
		I_D=-250㎂, V_{GS}=0V	P-Ch	-30	-	-	
Drain Cut-off Current	I_{DSS}	V_{DS}=24V, V_{GS}=0V	N-Ch	-	-	1	㎂
		V_{DS}=-24V, V_{GS}=0V	P-Ch	-	-	-1	
Gate Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	N-Ch	-	-	±100	nA
			P-Ch	-	-	±100	
Gate Threshold Voltage	V_{th}	V_{DS}=V_{GS}, I_D=250㎂	N-Ch	0.8	-	1.8	V
		V_{DS}=V_{GS}, I_D=-250㎂	P-Ch	-1.0	-1.5	-2.5	
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=6A (Note 1)	N-Ch	-	28	40	mΩ
		V_{GS}=-10V, I_D=-4.9A (Note 1)	P-Ch	-	45	55	
		V_{GS}=4.5V, I_D=5.2A (Note 1)	N-Ch	-	40	50	
		V_{GS}=4.5V, I_D=-3.6A (Note 1)	P-Ch	-	75	85	
ON State Drain Current	$I_{D(ON)}$	V_{GS}=10V, V_{DS}=5V	N-Ch	15	-	-	A
		V_{GS}=-10V, V_{DS}=-5V	P-Ch	-12	-	-	
Forward Transconductance	g_{fs}	V_{DS}=10V, I_D=6A (Note 1)	N-Ch	6	-	-	S
		V_{DS}=-15V, I_D=-4.9A (Note 1)	P-Ch	4	-	-	
Source-Drain Diode Forward Voltage	V_{SD}	I_S=1.7A, V_{GS}=0V (Note 1)	N-Ch	-	0.77	1.2	V
		I_S=-1.7A, V_{GS}=0V (Note 1)	P-Ch	-	-0.82	-1.2	
Dynamic (Note 2)							
Total Gate Charge	Q_g	**N-Ch** : V_{DS}=10V, I_D=6A, V_{GS}=4.5V (Fig.1) **P-Ch** : V_{DS}=-15V, I_D=-4.9A, V_{GS}=-10V (Fig.3)	N-Ch	-	9.3	-	nC
			P-Ch	-	15.6	-	
Gate-Source Charge	Q_{gs}		N-Ch	-	2.5	-	
			P-Ch	-	2.4	-	
Gate-Drain Charge	Q_{gd}		N-Ch	-	3.2	-	
			P-Ch	-	3.3	-	
Turn-on Delay time	$t_{d(on)}$	**N-Ch** : V_{DD}=10V, I_D=1A, V_{GS}=4.5V, R_G=6Ω R_L=10Ω (Fig.2) **P-Ch** : V_{DD}=-15V, I_D=-1A, V_{GS}=-10V, R_L=15Ω, R_G=6Ω (Fig.4)	N-Ch	-	15.6	-	ns
			P-Ch	-	13	-	
Turn-on Rise time	t_r		N-Ch	-	9.7	-	
			P-Ch	-	4.7	-	
Turn-off Delay time	$t_{d(off)}$		N-Ch	-	26.3	-	
			P-Ch	-	47.1	-	
Turn-off Fall time	t_f		N-Ch	-	26.9	-	
			P-Ch	-	17	-	
Input Capacitance	C_{iss}	**N-Ch** : V_{DS}=8V, V_{GS}=0V, f=1.0MHz **P-Ch** : V_{DS}=-15V, V_{GS}=0V, f=1.0MHz	N-Ch	-	510	-	pF
			P-Ch	-	393	-	
Output Capacitance	C_{oss}		N-Ch	-	155	-	
			P-Ch	-	116	-	
Reverse transfer Capacitance	C_{rss}		N-Ch	-	127	-	
			P-Ch	-	45	-	

Note 1) Pulse test : Pulse width ≤ 300㎲, Duty Cycle ≤ 2%.

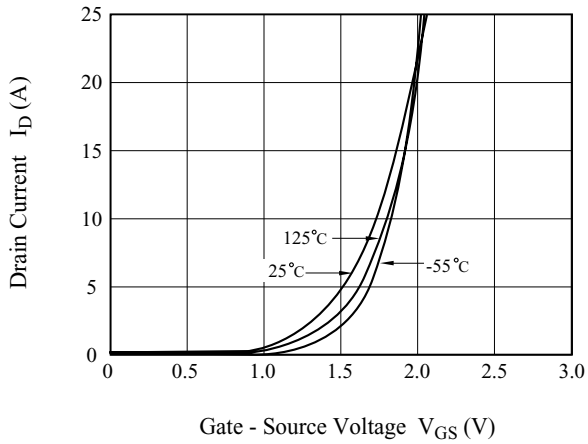
Note 2) Guaranteed by design. Not subject to production testing.

N-Channel

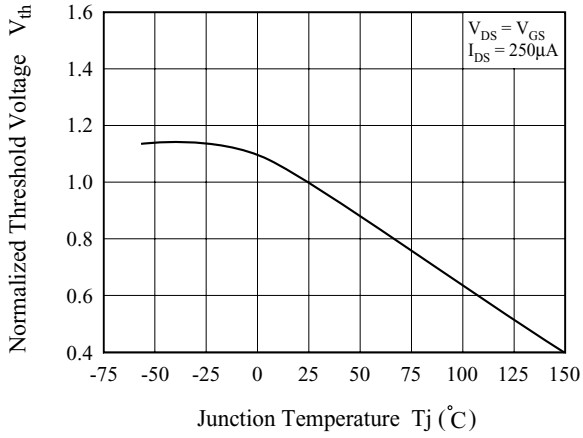
I_D - V_{DS}



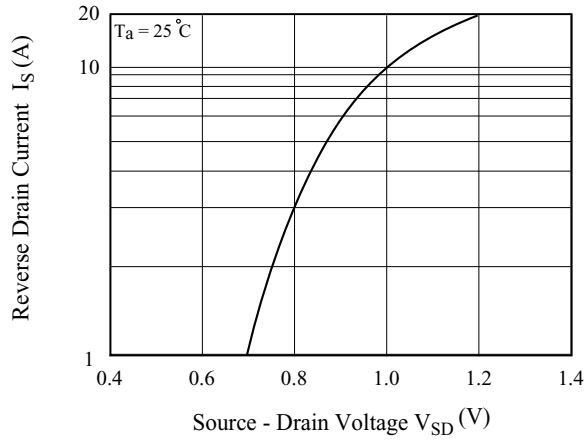
I_D - V_{GS}



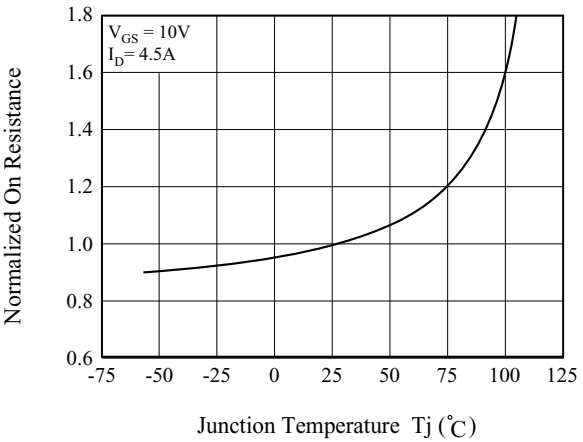
V_{th} - T_j



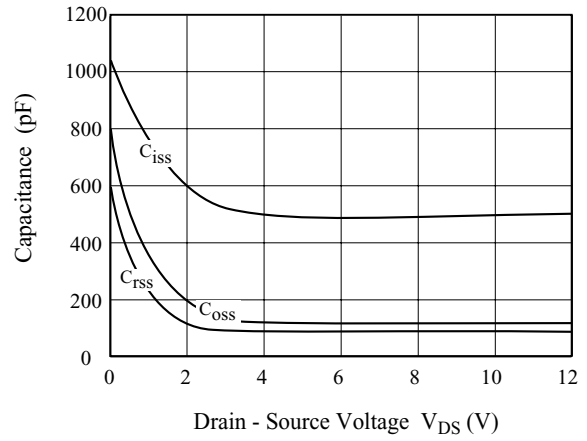
I_S - V_{SD}



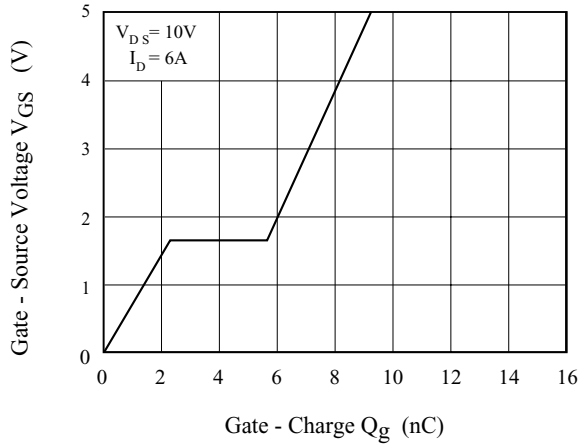
$R_{DS(ON)}$ - T_j



C - V_{DS}

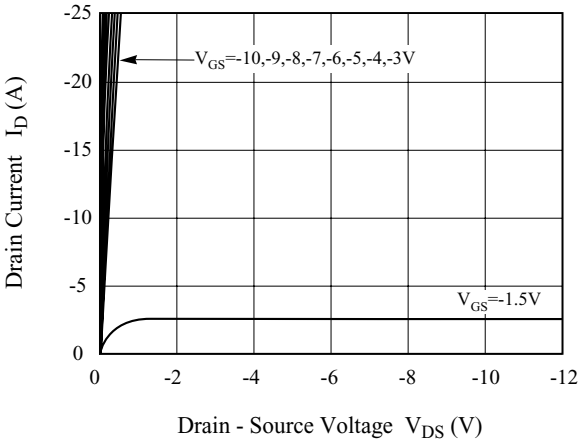


Q_g - V_{GS}

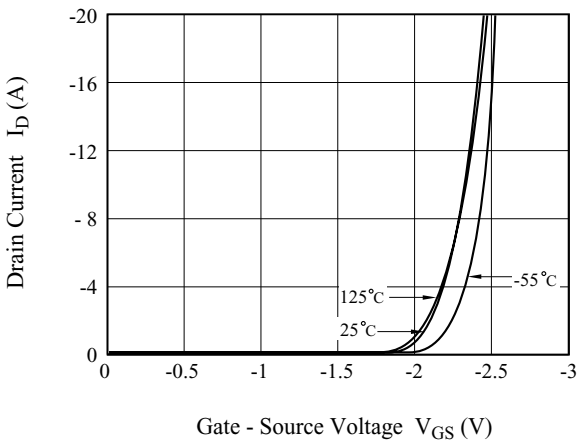


P-Channel

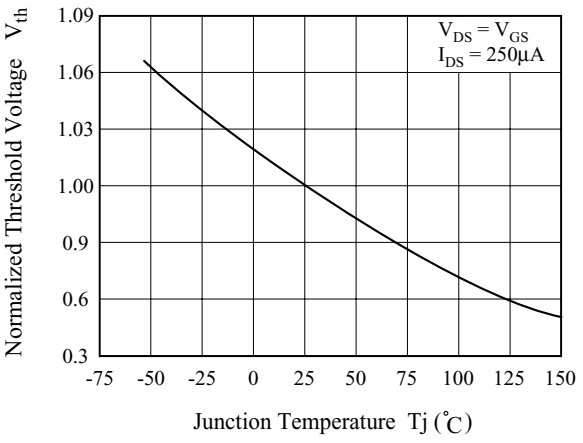
I_D - V_{DS}



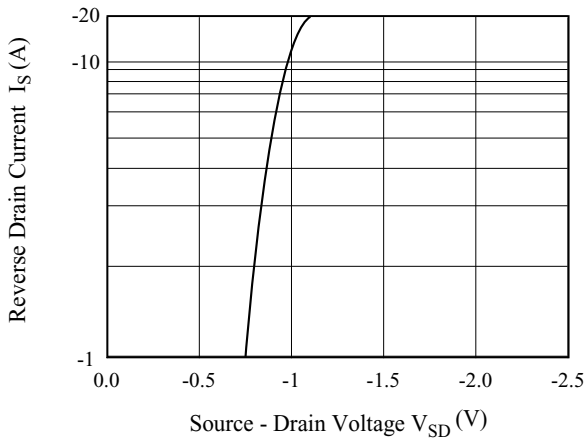
I_D - V_{GS}



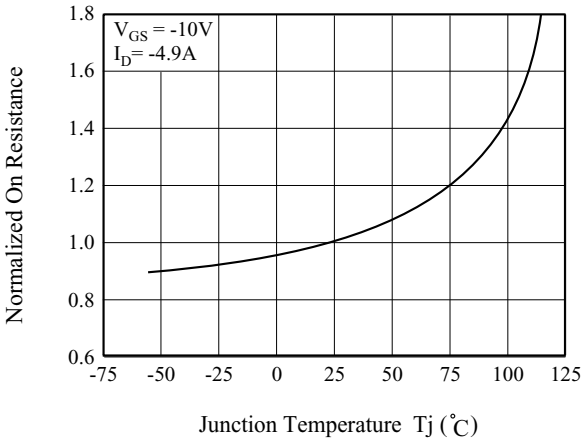
V_{th} - T_j



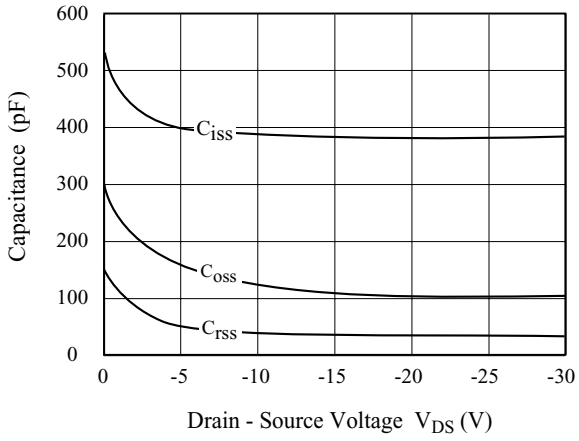
I_S - V_{SD}



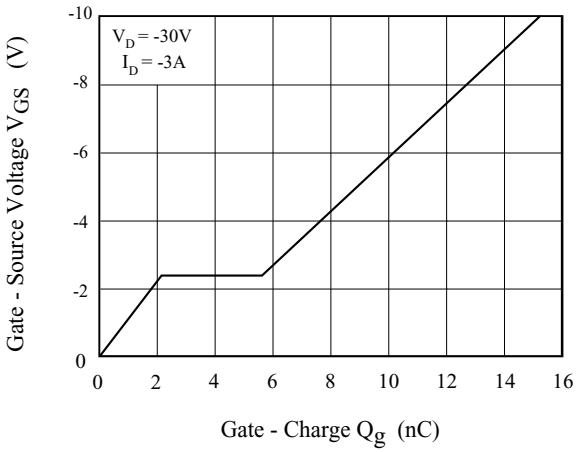
$R_{DS(ON)}$ - T_j



C - V_{DS}



Q_g - V_{GS}



R_{th}

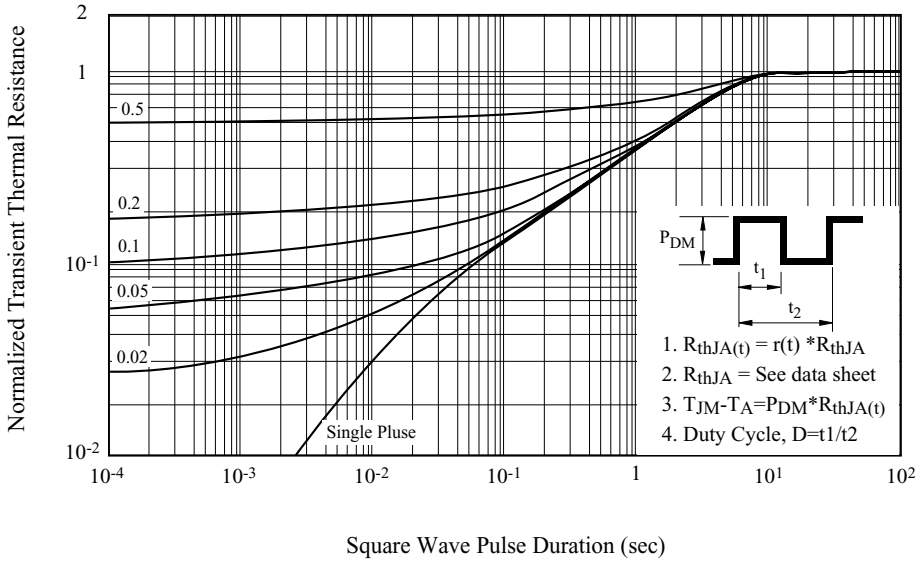


Fig. 1 Gate Charge

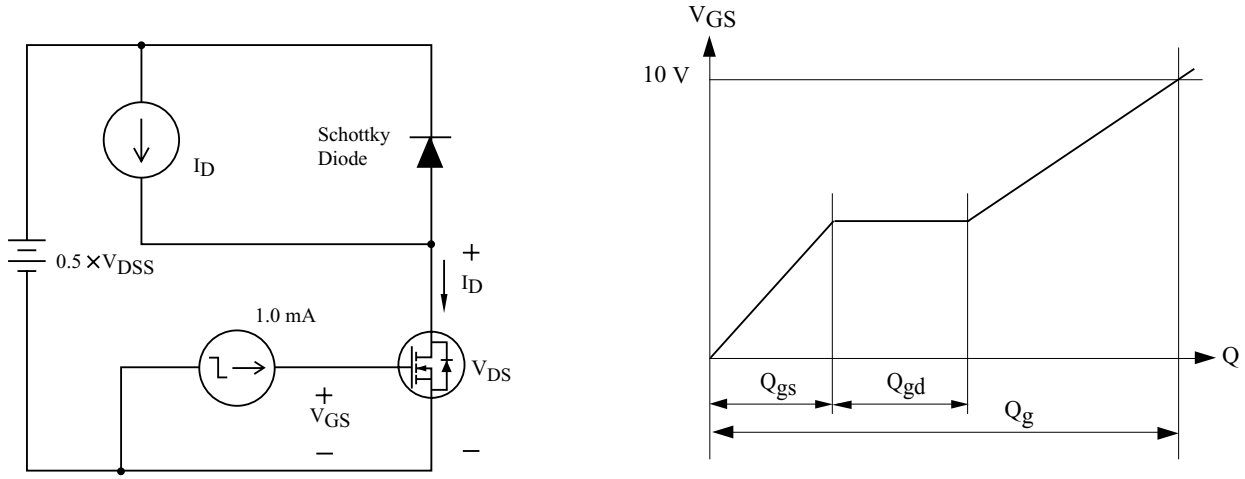


Fig. 2 Resistive Load Switching

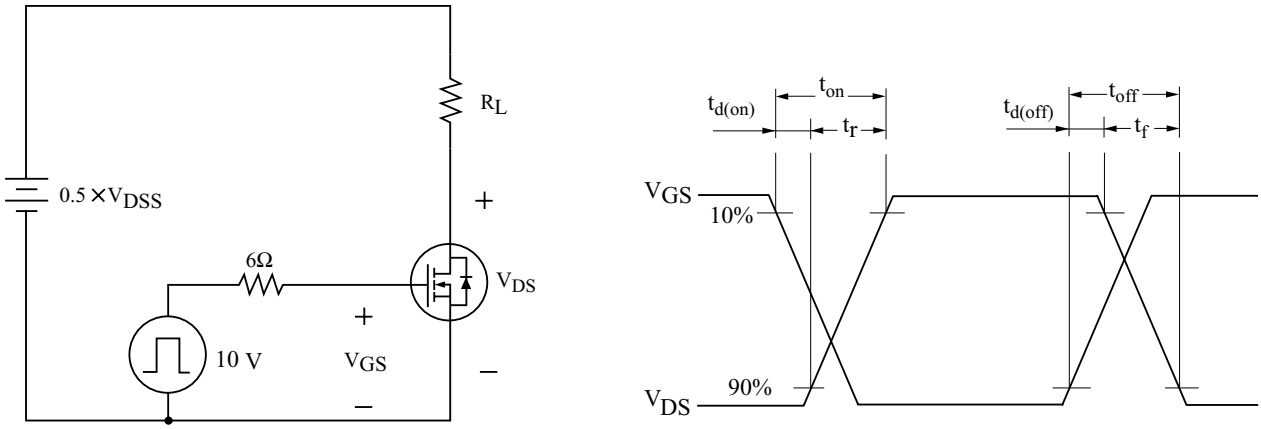


Fig. 3 Gate Charge

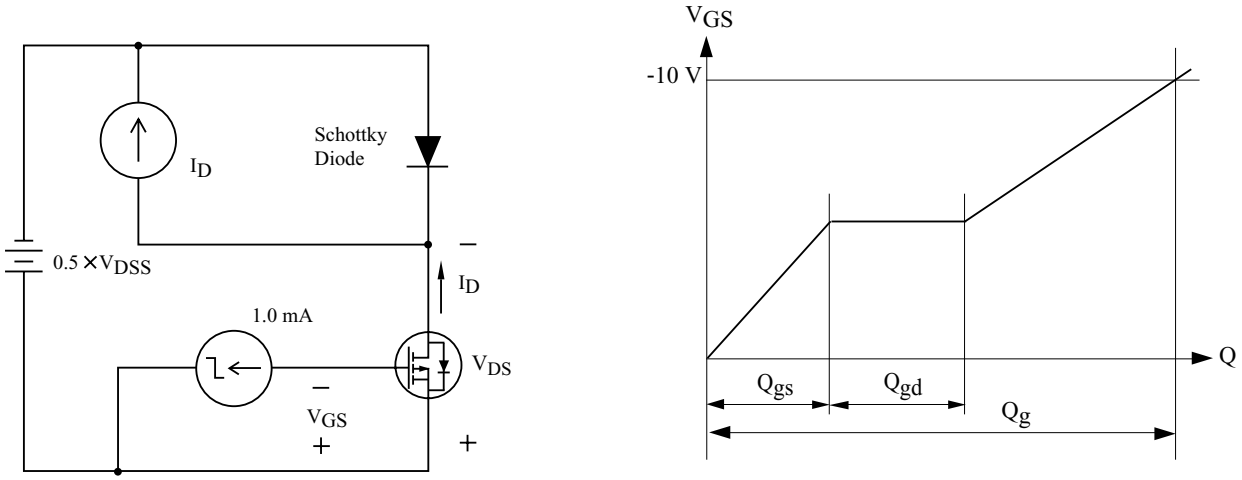


Fig. 4 Resistive Load Switching