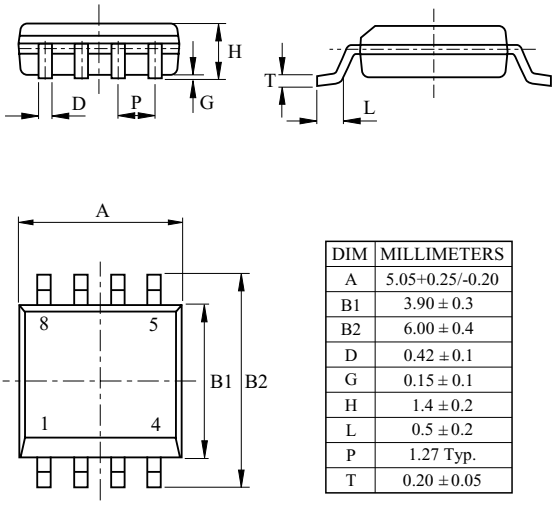
General Description

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

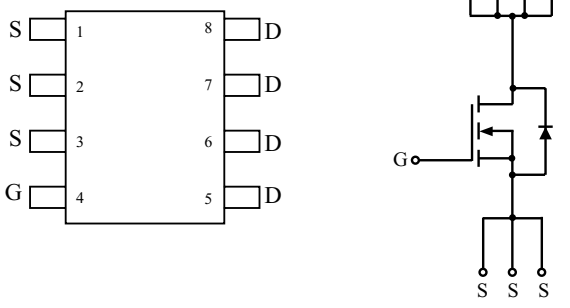
- V_{DSS}=30V, I_D=6.6A.
- Low Drain-Source ON Resistance.
  : $R_{DS(ON)}$=28mΩ (typ.) @ V_{GS}=10V
  : $R_{DS(ON)}$=56mΩ (typ.) @ V_{GS}=4.5V
- Super High Dense Cell Design.
- High Power and Current Handling Capability.

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	DC	I_D *	6.6	A
	Pulsed (note1)	I_{DP} *	26	
Source-Drain Diode Current		I_S	1.7	A
Drain Power Dissipation		P_D *	2.5	W
Maximum Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55～150	℃
Thermal Resistance, Junction to Ambient		R_{thJA}*	50	℃/W

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

PIN CONNECTION (TOP VIEW)



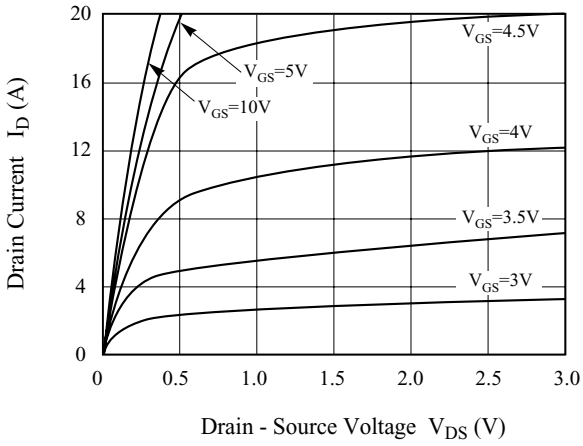
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=250㎂, V_{GS}=0V,	30	-	-	V
Drain Cut-off Current	I_{DSS}	V_{GS}=0V, V_{DS}=24V	-	-	1	㎂
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	V_{th}	V_{DS}=V_{GS}, I_D=250㎂	1.0	1.7	2.5	V
Drain-Source ON Resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=6A (Note 1)	-	20	28	mΩ
		V_{GS}=4.5V, I_D=3A (Note 1)	-	42	56	
ON State Drain Current	$I_{D(ON)}$	V_{GS}=10V, V_{DS}=5V (Note 1)	20	-	-	A
Forward Transconductance	g_{fs}	V_{DS}=5V, I_D=6A (Note 1)	-	8	-	S
Source-Drain Diode Forward Voltage	V_{SD}	I_S=1.7A, V_{GS}=0V (Note 1)	-	0.79	1.2	V
Dynamic (Note 2)						
Total Gate Charge	Q_g	V_{DS}=15V, I_D=6A, V_{GS}=10V (Fig.1)	-	13.5	-	nC
		V_{DS}=15V, I_D=6A, V_{GS}=4.5V (Fig.1)	-	7.1	-	
Gate-Source Charge	Q_{gs}	V_{DS}=15V, I_D=6A, V_{GS}=4.5V (Fig.1)	-	3	-	
Gate-Drain Charge	Q_{gd}		-	2.8	-	
Turn-on Delay time	$t_{d(on)}$	V_{DD}=15V, I_D=1A, V_{GS}=10V, R_G=10Ω (Fig.2)	-	12.7	-	ns
Turn-on Rise time	t_r		-	4.1	-	
Turn-off Delay time	$t_{d(off)}$		-	19.4	-	
Turn-off Fall time	t_f		-	12.9	-	
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1.0MHz	-	630	-	pF
Output Capacitance	C_{oss}		-	170	-	
Reverse transfer Capacitance	C_{rss}		-	110	-	

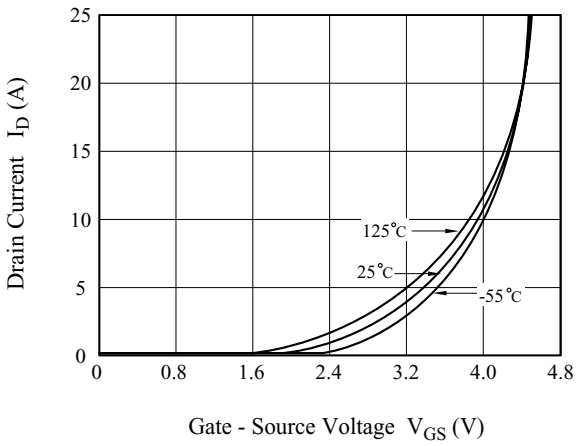
Note 1) Pulse test : Pulse width≤300㎲, Duty Cycle≤2%.

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

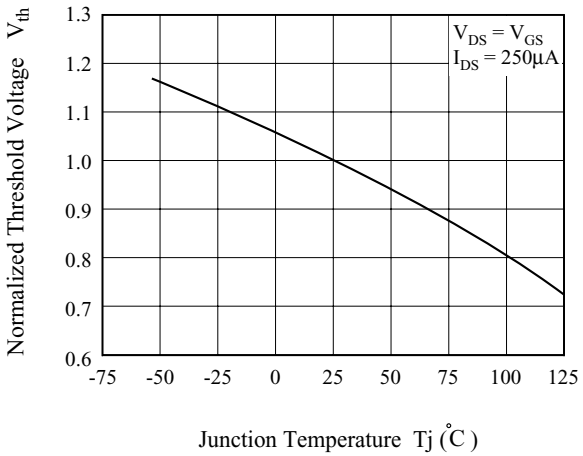
I_D - V_{DS}



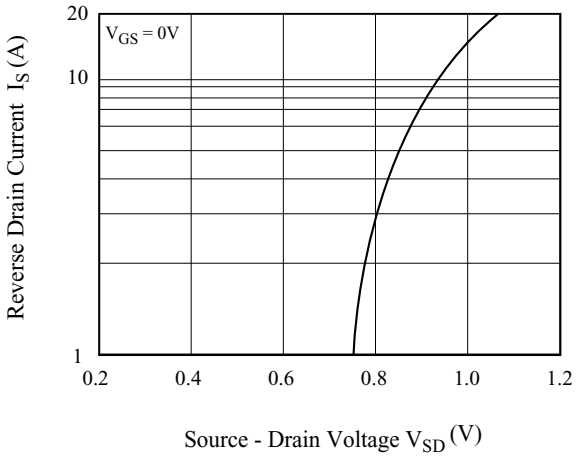
I_D - V_{GS}



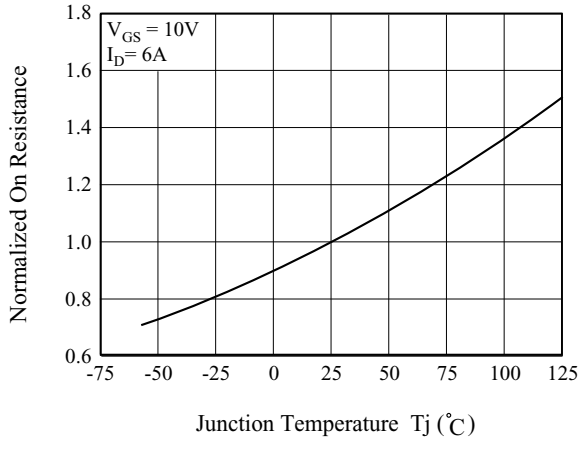
V_{th} - T_j



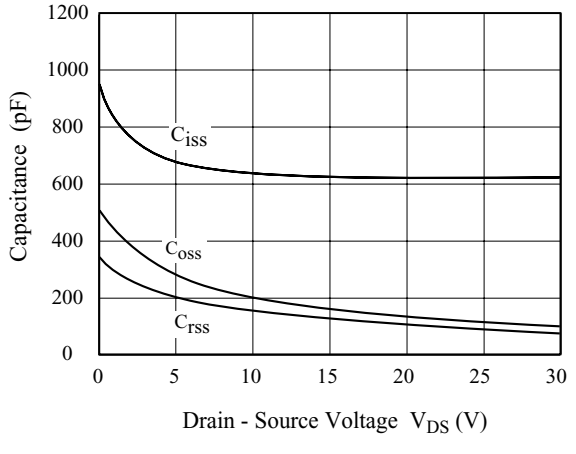
I_S - V_{SD}



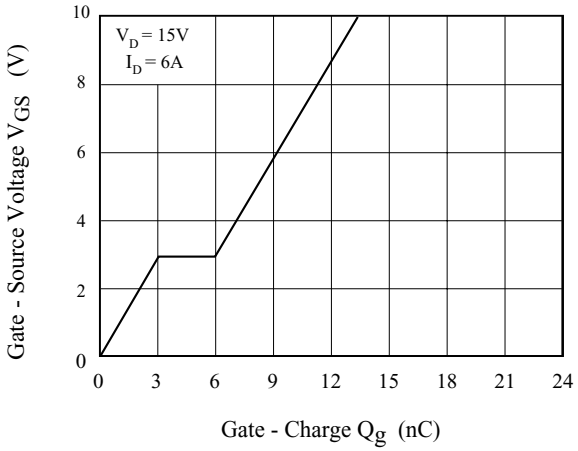
$R_{DS(ON)}$ - T_j



C - V_{DS}



Q_g - V_{GS}


V_D = 15V
I_D = 6A
Gate - Source Voltage V_{GS} (V)
Gate - Charge Q_g (nC)
0
2
4
6
8
10
0
3
6
9
12
15
18
21
24

R_{th}

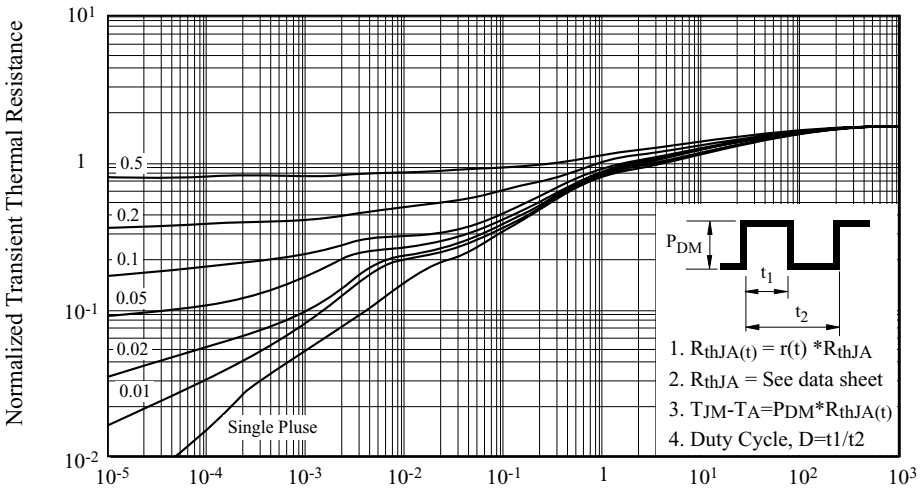

Normalized Transient Thermal Resistance
Square Wave Pulse Duration (sec)
0.5
0.2
0.1
0.05
0.02
0.01
Single Pluse
P_{DM}
t_1
t_2
1. $R_{thJA(t)}$ = r(t) *R_{thJA}
2. R_{thJA} = See data sheet
3. T_{JM}-T_A=P_{DM}*$R_{thJA(t)}$
4. Duty Cycle, D=t1/t2
10^{1}
1
10^{-1}
10^{-2}
10^{-5}
10^{-4}
10^{-3}
10^{-2}
10^{-1}
1
10^{1}
10^{2}
10^{3}

Fig. 1 Gate Charge

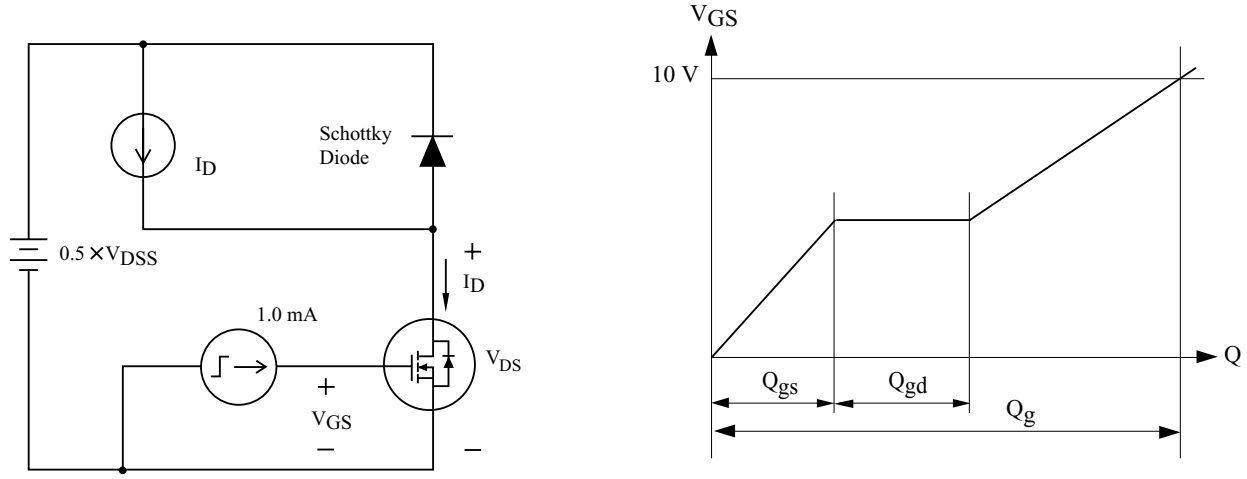


Fig. 2 Resistive Load Switching