

General Description

Battery Packs and Battery-powered portable equipment applications. It's mainly suitable for use as a load switch in battery powered applications and protection in battery packs.

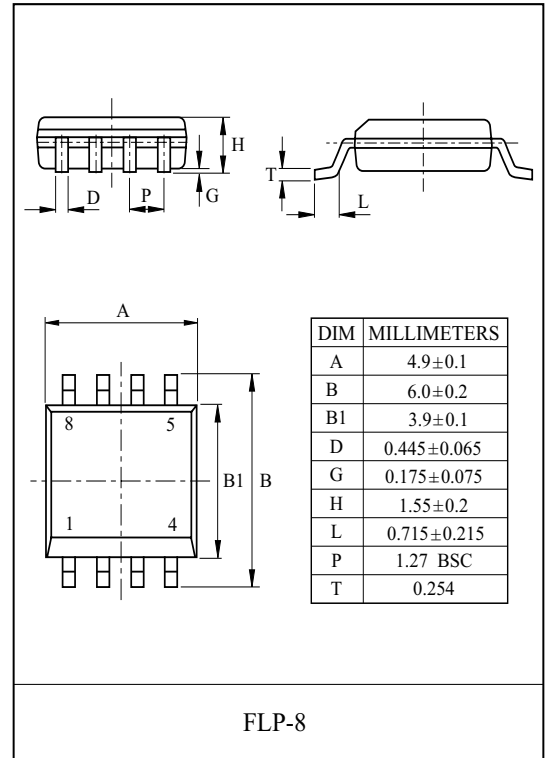
FEATURES

- $V_{DSS} = -20V$, $I_D = -6.5A$.
- Drain-Source ON Resistance.
 - : $R_{DS(ON)} = 35m\ \Omega$ (Max.) @ $V_{GS} = -4.5V$.
 - : $R_{DS(ON)} = 60m\ \Omega$ (Max.) @ $V_{GS} = -2.5V$.

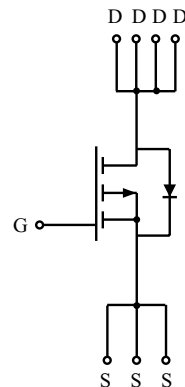
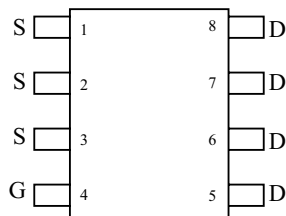
MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	± 12	V
Drain Current	DC	I_D^*	-6.5	A
	Pulsed (Note2)	I_{DP}	-32	
Drain Power Dissipation	Ta=25 °C	P_D^*	2.5	W
	Ta=100 °C		1.0	
Maximum Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	-55 ~ 150	°C
Thermal Resistance, Junction to Ambient		R_{thJA}^*	50	°C/W

* : Surface Mounted on 1" × 1" Board, t ≤ 10sec.



PIN CONNECTION (TOP VIEW)



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ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu A, V_{GS}=0V,$	-20	-	-	V
Drain Cut-off Current	I_{DSS}	$V_{DS}=-20V, V_{GS}=0V,$	-	-	-1	μA
Gate Threshold Voltage	V_{th}	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.6	-	-	V
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 100	nA
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS}=-4.5V, I_D=-6.5A$ (Note 2)	-	27	35	m Ω
		$V_{GS}=-2.5V, I_D=-5.0A$ (Note 2)	-	46	60	
Dynamic <small>(Note 3)</small>						
Total Gate Charge	Q_g	$V_{DS}=-10V, I_D=-6.5A$ $V_{GS}=-4.5V$ (Fig.1)	-	13.6	-	nC
Gate-Source Charge	Q_{gs}		-	2.3	-	
Gate-Drain Charge	Q_{gd}		-	5.5	-	
Turn-on Delay time	$t_{d(on)}$	$V_{DD}=-10V,$ $R_L=1.5\Omega, R_G=6\Omega$ (Fig.2)	-	10	-	ns
Turn-on Rise time	t_r		-	35	-	
Turn-off Delay time	$t_{d(off)}$		-	38	-	
Turn-off Fall time	t_f		-	50	-	
Source-Drain Diode Ratings						
Continuous Source Current	I_S	$V_{GS} < V_{th}$ (Note 1)	-	-	-1.7	A
Diode Forward Voltage	V_{SD}	$I_S=-6.5A, V_{GS}=0V$ (Note 2)	-	-	-1.5	V

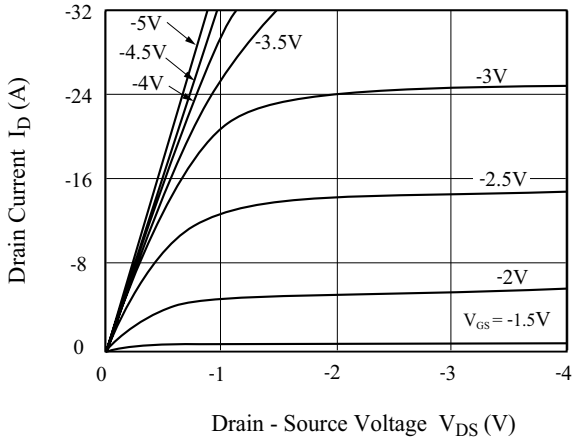
Note 1) Based on thermal dissipation from junction to ambient while mounted on a 1" × 1" PCB Board.

Note 2) Pulse test : Pulse width $\leq 300\mu s$.

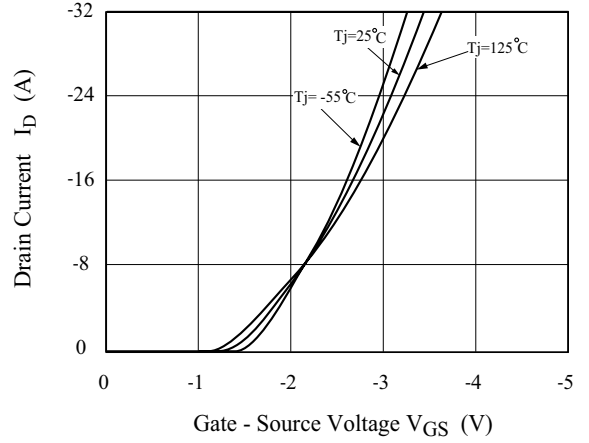
Note 3) Guaranteed by design, not subject to production testing.

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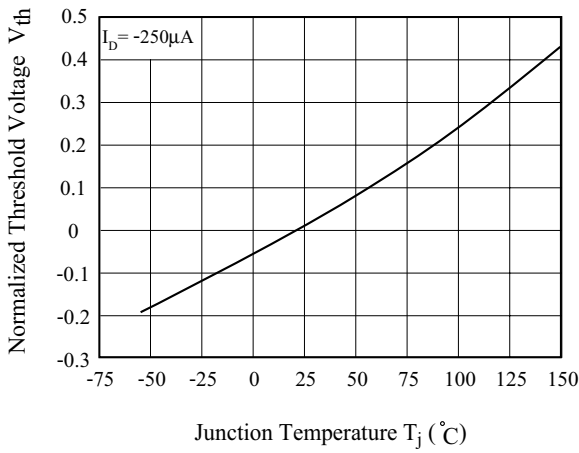
$I_D - V_{DS}$



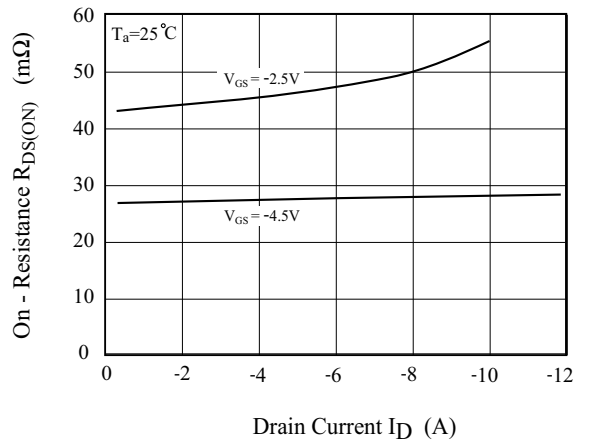
$I_D - V_{GS}$



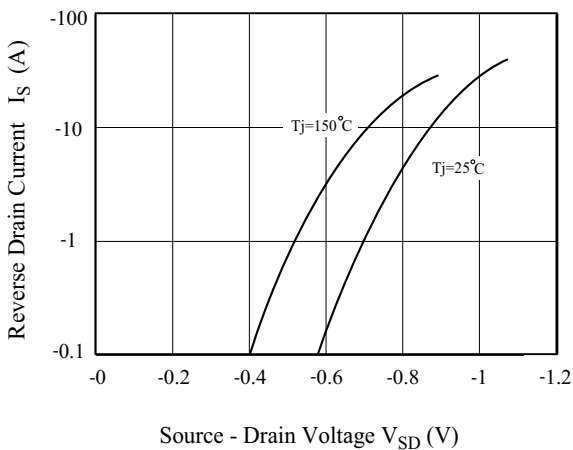
$V_{th} - T_j$



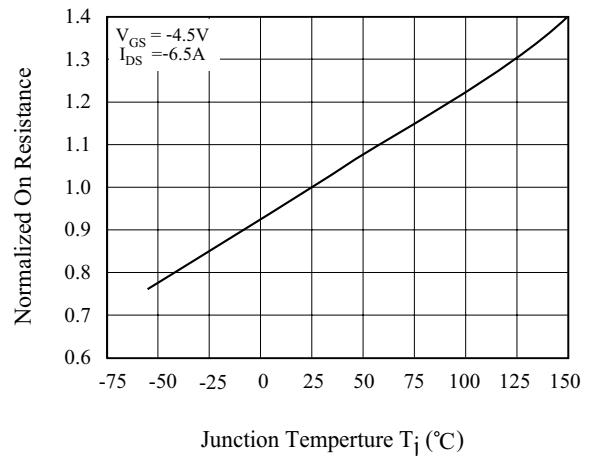
$R_{DS(ON)} - I_D$



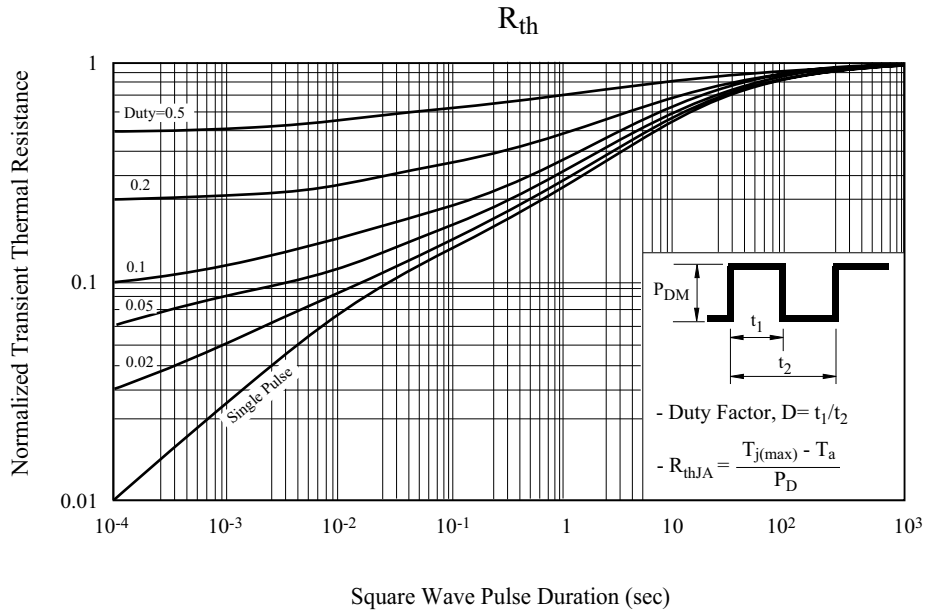
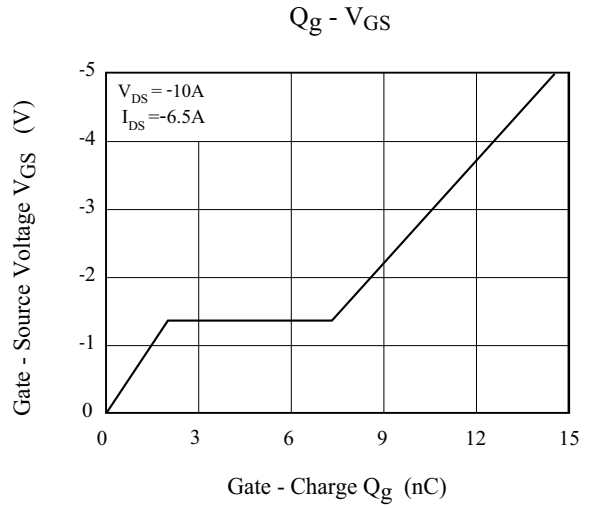
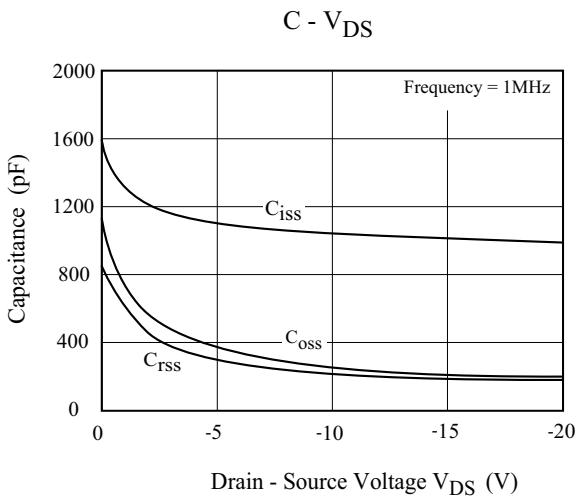
$I_S - V_{SD}$



$R_{DS(ON)} - T_j$



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Fig. 1 Gate Charge

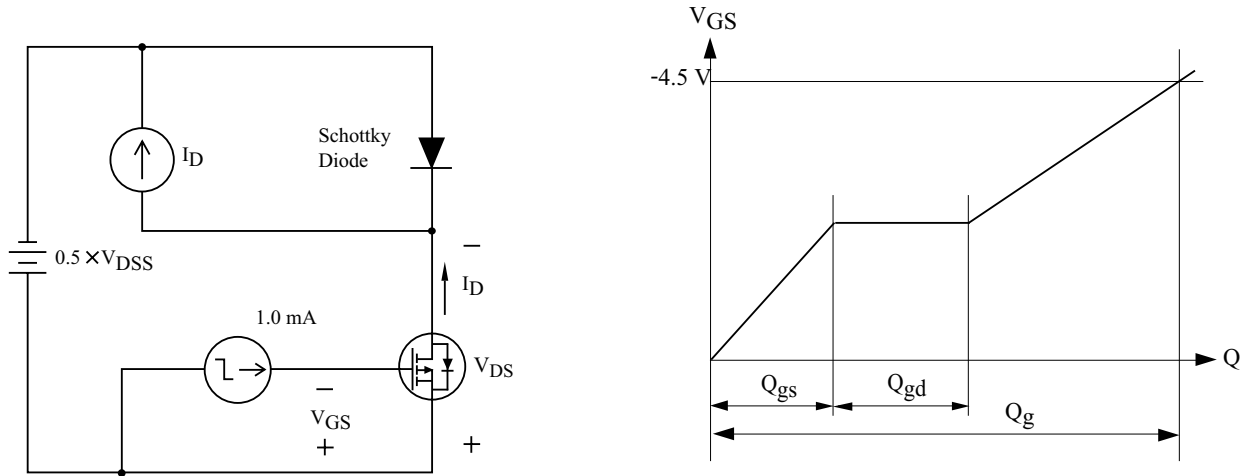


Fig. 2 Resistive Load Switching

