

GENERAL DESCRIPTION

This planer 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 portable equipment and SMPS.

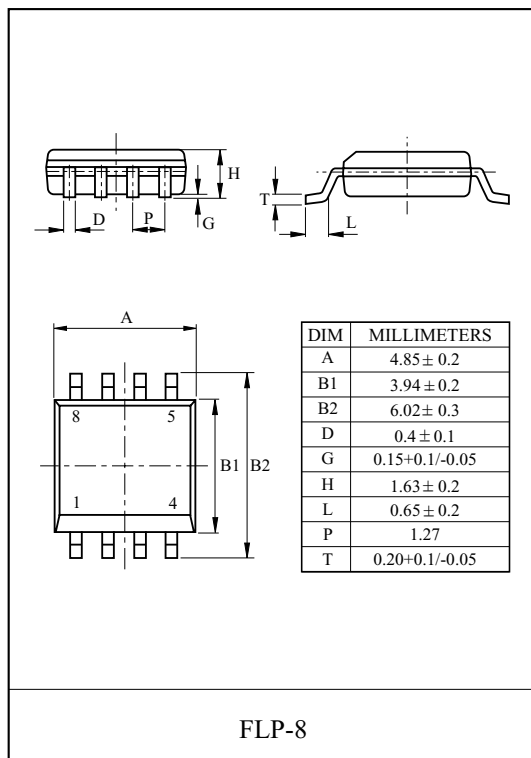
FEATURES

- $V_{DSS}=30V$, $I_D=6A$.
- Drain-Source ON Resistance.
 $R_{DS(ON)}=28m\ \Omega$ (Max.) @ $V_{GS}=10V$
 $R_{DS(ON)}=42m\ \Omega$ (Max.) @ $V_{GS}=4.5V$
- Super High Dense Cell Design
- High Power and Current Handling Capability

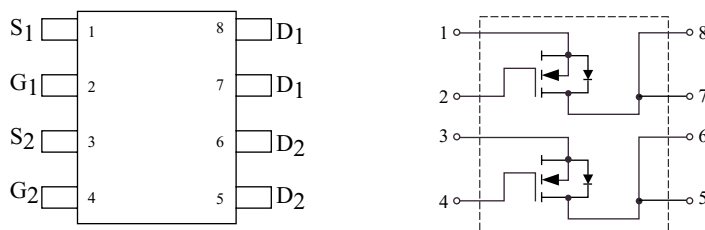
MAXIMUM RATING (Ta=25 °C Unless otherwise noted)

CHARACTERISTIC		SYMBOL	PATING	UNIT
Drain Source Voltage		V_{DSS}	30	V
Gate Source Voltage		V_{GSS}	± 20	V
Drain Current	DC	I_D^*	6	A
	Pulsed (note1)	I_{DP}	20	A
Drain Source Diode Forward Current		I_S	1.3	A
Drain Power Dissipation	25 °C	P_D^*	2	W
	100 °C		1.6	W
Maximum Junction Temperature		T_j	-50~150	°C
Storage Temperature Range		T_{stg}	-50~150	°C
Thermal Resistance, Junction to Ambient		R_{thJA}^*	78	°C/W

* : Surface Mounted on FR4 Board, $t \leq 10sec$.



PIN CONNECTION (TOP VIEW)



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ELECTRICAL CHARACTERISTICS (Ta=25℃) UNLESS OTHERWISE NOTED

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D =250μA, V _{GS} =0V	30	-	-	V
Drain Cut-off Current	I _{DSS}	V _{DS} =24V, V _{GS} =0V	-	-	1	μA
Gate Leakage Current	I _{GSS}	V _{GS} =±25V, V _{DS} =0V	-	-	±100	μA
Gate Threshold Voltage	V _{th}	V _{DS} =V _{GS} , I _D =250μA	1	2	3	V
Drain-Source ON Resistance	R _{DS(ON)}	V _{GS} =10.0V, I _D =6A	-	24	28	m Ω
		V _{GS} =4.5V, I _D =4.9A	-	35	42	
On-State Drain Current	I _{D(ON)}	V _{DS} =5V, V _{GS} =10A	20	-	-	A
Forward Transconductance	G _{fs}	V _{DS} =10V, I _D =6A	-	20	-	S
Dynamic (Note 3)						
Input Capacitance	C _{iss}	V _{DS} =15V, f=1MHz, V _{GS} =0V	-	740	-	pF
Ouput Capacitance	C _{oss}		-	170	-	
Reverse Transfer Capacitance	C _{rss}		-	75	-	
Total Gate Charge	Q _g	V _{DS} =10V, V _{GS} =5V, I _D =6A	-	7	10	nC
Gate-Source Charge	Q _{gs}		-	3.8	-	
Gate-Drain Charge	Q _{gd}		-	2.5	-	
Turn-On Delat Time	t _{d(on)}	V _{DD} =15V, V _{GS} =10V I _D =1A, R _G =6 Ω (Note 1)	-	8	16	ns
Turn-On Rise Time	t _r		-	13	24	
Turn-On Deley Time	t _{d(off)}		-	18	29	
Turn-On Fall Time	t _f		-	8	6	
Source-Drain Diode Ratings						
Source-Drain Forward Voltage	V _{SDF}	I _{DR} =1.7A, V _{GS} =0V	-	0.75	1.2	V
Note 1. Pulse Test : Pulse width ≤ 10μs , Duty cycle ≤ 1%						

* Upper electrical characteristics can be changed because these are tentative specifications.

* Graphs are omitted because these are tentative specifications.

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Fig1. $I_D - V_{DS}$

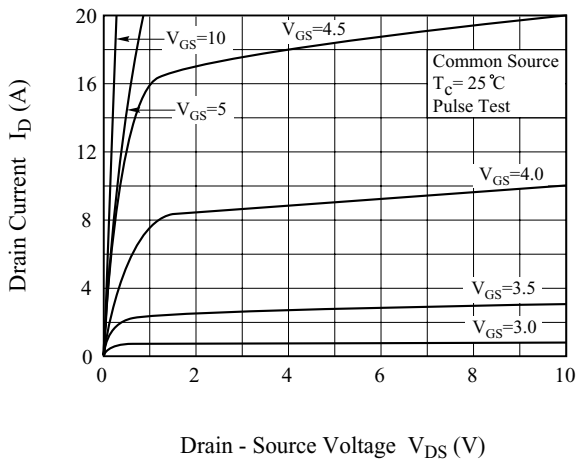


Fig2. $R_{DS(on)} - I_D$

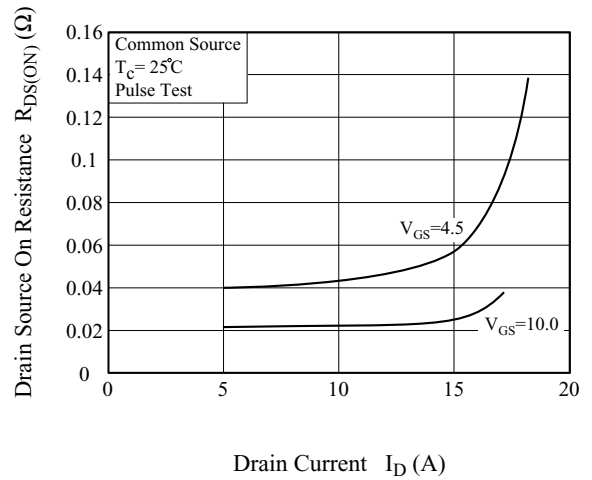


Fig3. $I_D - V_{GS}$

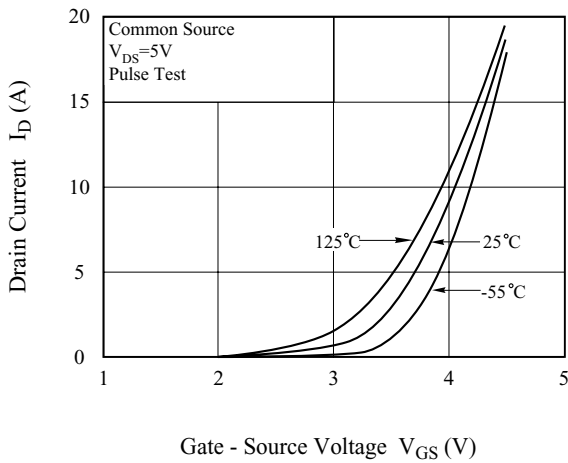


Fig4. $R_{DS(on)} - T_j$

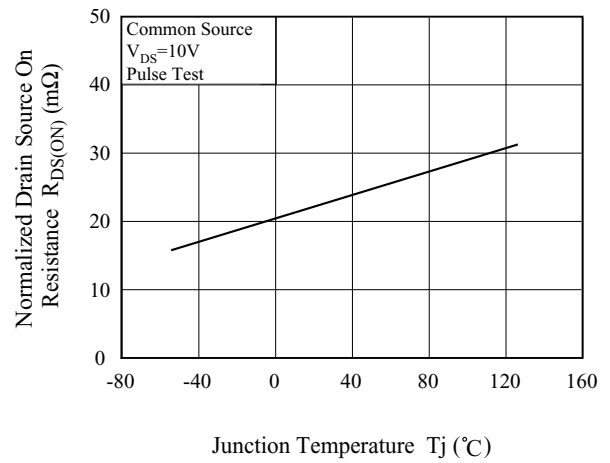


Fig5. $V_{th} - T_j$

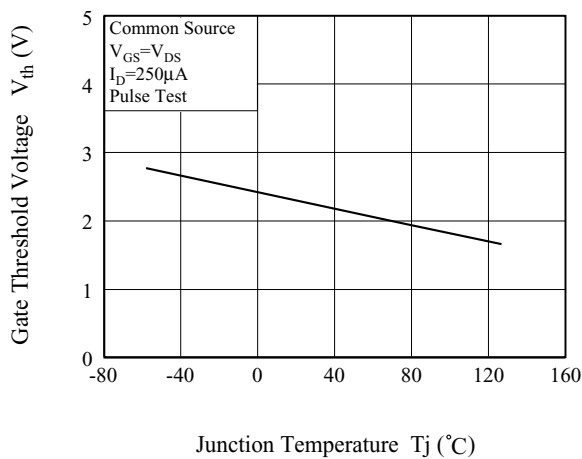
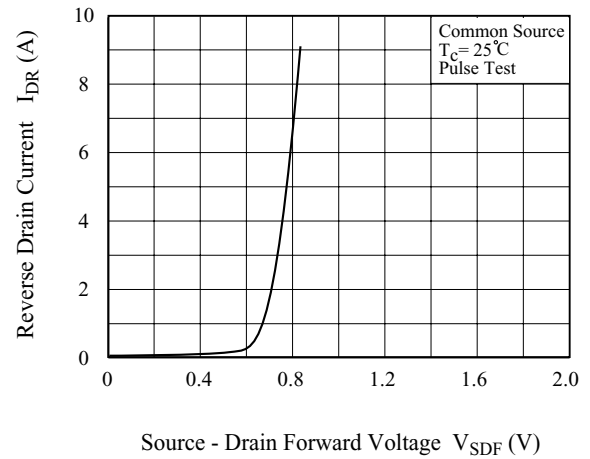


Fig6. $I_{DR} - V_{SDF}$



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Fig7. Transient Thermal Response Curve

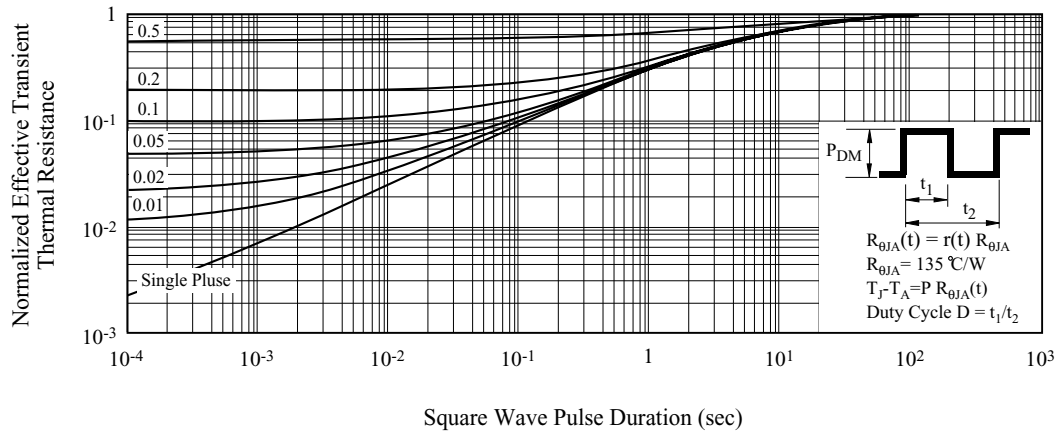


Fig8. Safe Operation Area

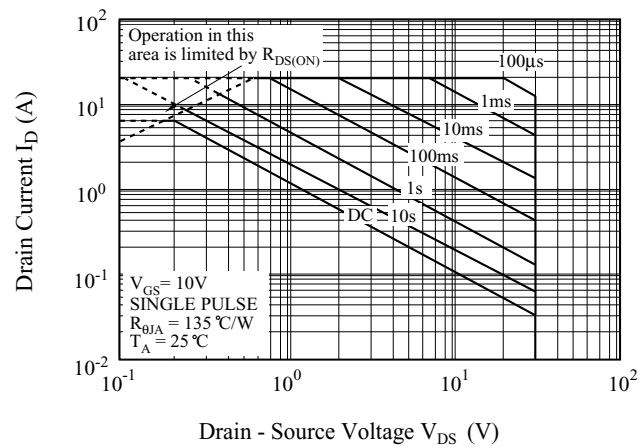


Fig. 9 Gate Charge

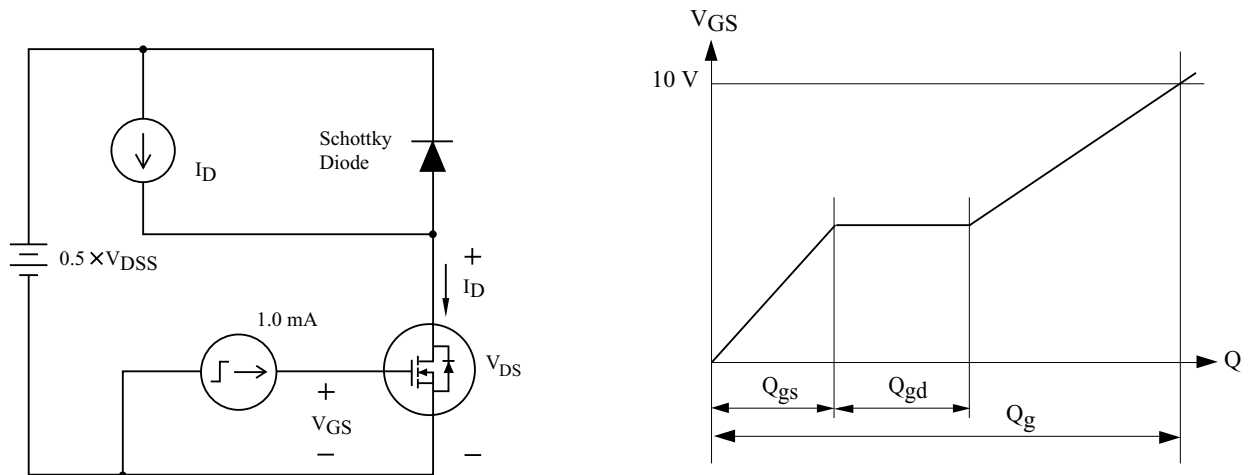


Fig. 10 Resistive Load Switching

