Dual N-Channel Enhancement Mode Field Effect Transistor

- **Features**

20V, 6A

$R_{DS(ON)}$ = 30mΩ @V_{GS} = 4.5V.

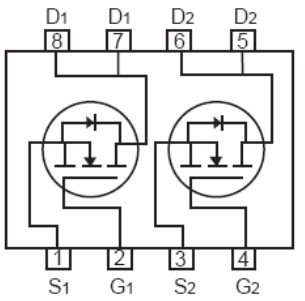
$R_{DS(ON)}$ = 40mΩ @V_{GS} = 2.5V.

Super high dense cell design for extremely low $R_{DS(ON)}$.

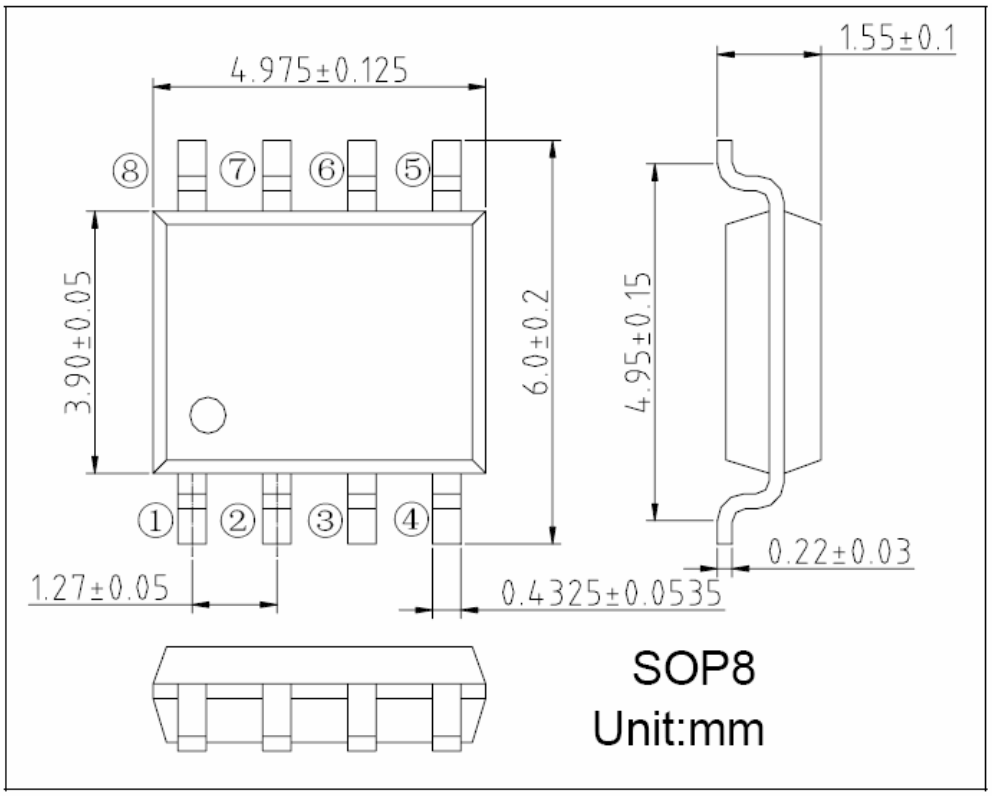
High power and current handing capability.

Surface mount Package.

- **Pin Configuration**



- **Package Information**



- **Ordering Information**

FFM9926 - □□

Package Type:

SQ: SOP8

Indicate The Product Number

- **Absolute Maximum Ratings** (T_A = 25℃ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±10	V
Drain Current-Continuous	I_D	6	A
Drain Current-Pulsed [a]	I_{DM}	35	A
Maximum Power Dissipation	P_D	2.0	W
Operating and Store Temperature Range	T_J，T_{stg}	-55 to 150	℃

- **Electrical Characteristics** (T_A = 25 ℃ unless otherwise noted)

Parameter	Symbol	Test Condition	MIN	TYP	MAX	Units
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0V, I_D = 250μA	20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 20V, V_{GS} = 0V	--	--	1	μA
Gate Body Leakage Current, Forward	I_{GSSF}	V_{GS} = 10V, V_{DS} = 0V	--	--	100	nA
Gate Body Leakage Current, Reverse	I_{GSSR}	V_{GS} = -10V, V_{DS} = 0V	--	--	-100	nA
On Characteristics [c]						
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS} = V_{DS}, I_D = 250μA	0.5	--	1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	V_{GS} = 4.5V, I_D = 6A	--	24	30	mΩ
		V_{GS} = 2.5V, I_D = 5.2A	--	32	40	mΩ
Forwand Transconductance	g_{FS}	V_{DS} = 10V, I_D = 6A	7	13	--	S
Dynamic Characteristics [d]						
Input Capacitance	Ciss	V_{DS} = 8V, V_{GS} = 0V, f = 1.0 MHz	--	500	--	pF
Output Capacitance	Coss		--	300	--	pF
Reverse Transfer Capacitance	Crss		--	140	--	pF
Switching Characteristics [d]						
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = 10V, I_D = 1A, V_{GS} = 4.5V, R_{GEN} = 6W	--	20	40	ns
Turn-On Rise Time	tr		--	18	40	ns
Turn-Off Delay Time	$t_{d(off)}$		--	60	108	ns
Turn-On Fall Time	tf		--	28	56	ns
Total Gate Charge	Qg	V_{DS} = 10V, I_D = 6A, V_{GS} = 4.5V	--	10	15	nc
Gate-Source Charge	Qgs		--	2.3	--	nc
Gate-Drain Charge	Qgd		--	2.9	--	nc

Drain-Source Diode Characteristics and Maximun Ratings						
Drain-Source Diode Forward Current [b]	I_S	--	--	--	1.7	A
Drain-Source Diode Forward Voltage [c]	V_{SD}	V_{GS} = 0V, I_S = 1.7A	--	--	1.2	V

Note*:

a.Repetitive Rating : Pulse width limited by maximum junction temperature.

b.Surface Mounted on FR4 Board, t < 10 sec.

c.Pulse Test : Pulse Width < 300μs, Duty Cycle < 2%.

d.Guaranteed by design, not subject to production testing.

- **Typical Performance Characteristics**

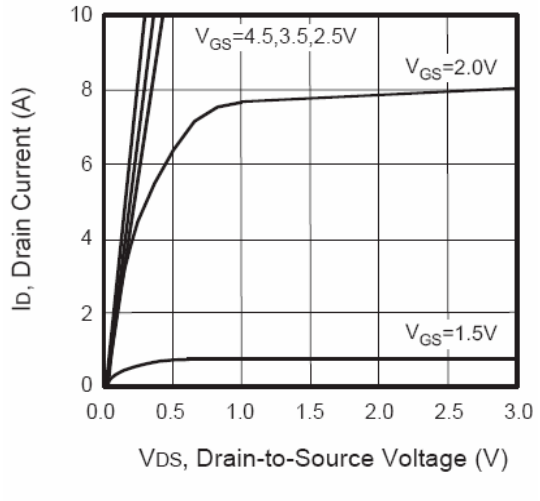


Figure 1. Output Characteristics

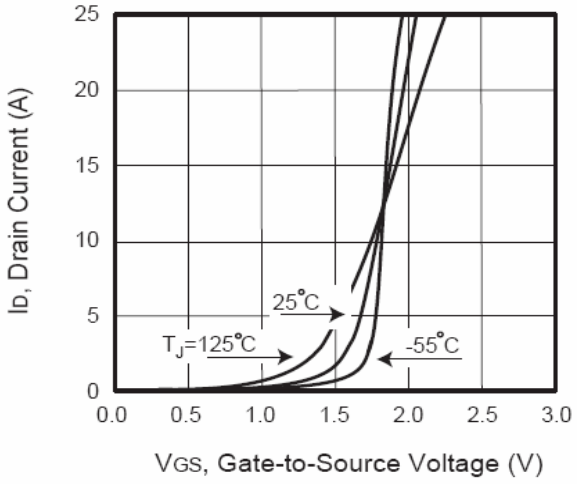


Figure 2. Transfer Characteristics

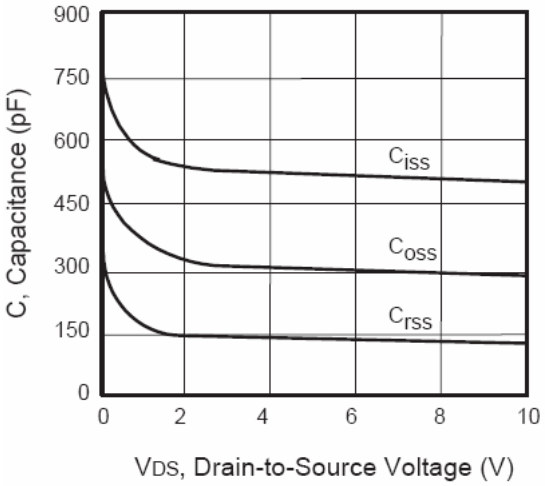


Figure 3. Capacitance

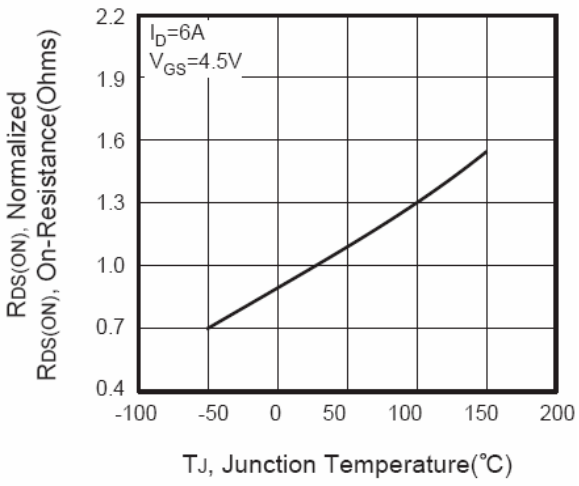


Figure 4. On-Resistance Variation with Temperature

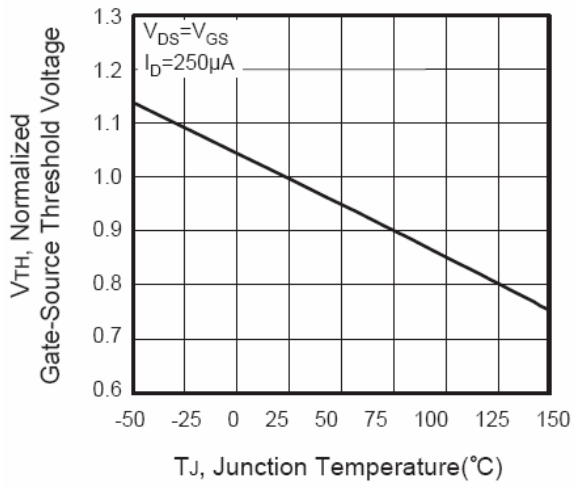


Figure 5. Gate Threshold Variation with Temperature

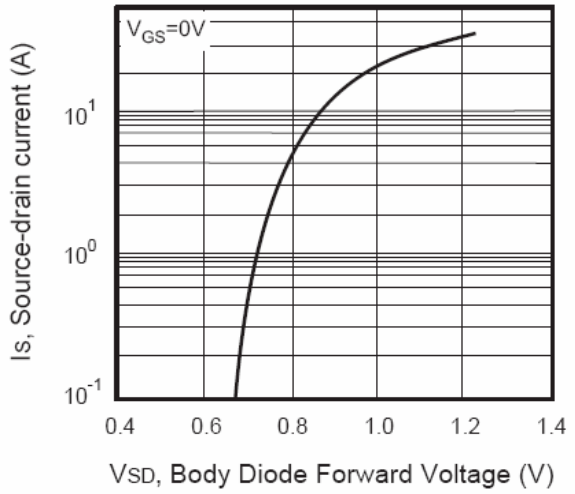


Figure 6. Body Diode Forward Voltage Variation with Source Current

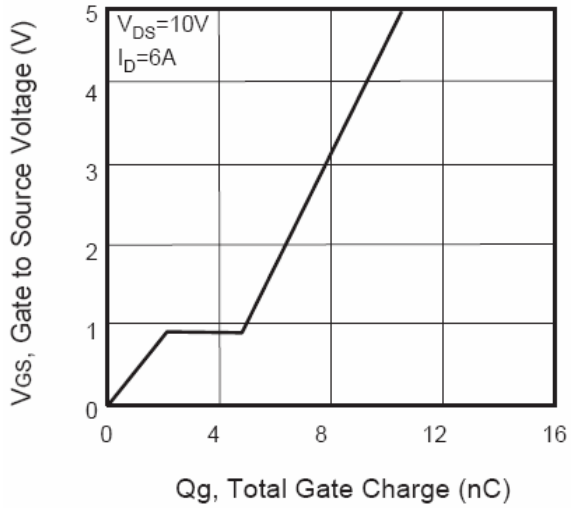


Figure 7. Gate Charge

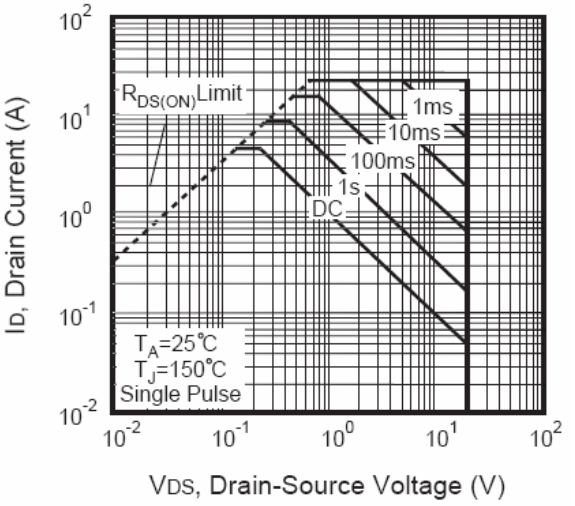


Figure 8. Maximum Safe Operating Area

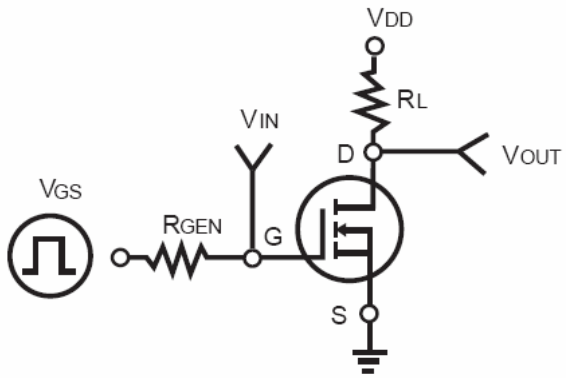


Figure 9. Switching Test Circuit

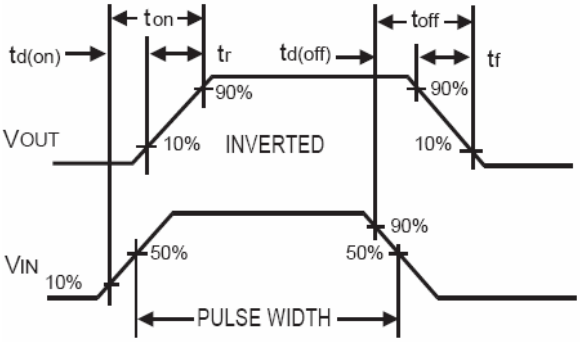


Figure 10. Switching Waveforms

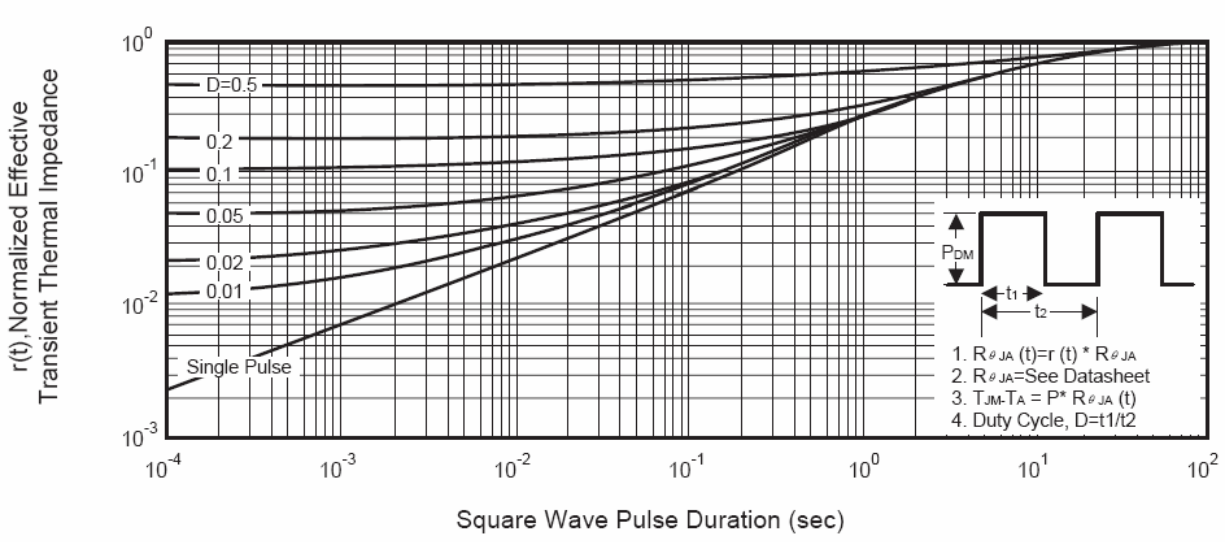


Figure 11. Normalized Thermal Transient Impedance Curve

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