

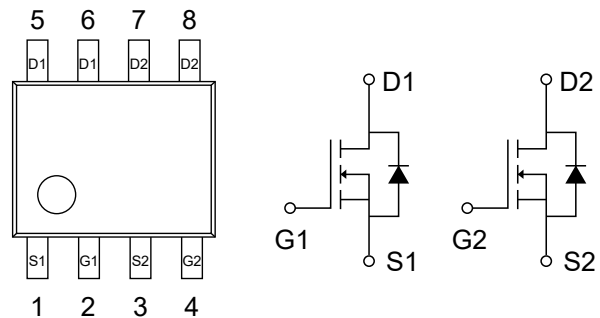
1.Features

- $V_{DS(V)}=20V$
- $I_D=7A$
- $R_{DS(ON)}<26m\Omega(V_{GS}=4.5V)$
- $R_{DS(ON)}<33m\Omega(V_{GS}=2.5V)$
- $R_{DS(ON)}<42m\Omega(V_{GS}=1.8V)$

2.Pinning information

Pin	Symbol	Description
2,4	G1, G2	GATE
1,3	S1, S2	SOURCE
5,6,7,8	D1, D2	DRAIN

SOP-8



3.Absolute Maximum Ratings $T_A=25^\circ C$ unless otherwise noted

Parameter		Symbol	Maximum	Units
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current ^A	$T_A=25^\circ C$	I_D	7	A
	$T_A=70^\circ C$		6	
Pulsed Drain Current ^B		I_{DM}	40	
Power Dissipation	$T_A=25^\circ C$	P_D	2	W
	$T_A=70^\circ C$		1.44	
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ C$

4.Thermal Characteristics

Parameter		Symbol	Typ	Max	Units
Maximum Junction-to-Ambient ^A	$t \leq 10s$	$R_{\theta JA}$	48	62.5	$^\circ C/W$
Maximum Junction-to-Ambient ^A	Steady-State		74	110	$^\circ C/W$
Maximum Junction-to-Lead ^C	Steady-State	$R_{\theta JL}$	35	40	$^\circ C/W$



5. Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=250\mu\text{A}$, $V_{GS}=0\text{V}$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=16\text{V}$, $V_{GS}=0\text{V}$			1	μA
		$T_J=55^\circ\text{C}$			5	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$, $V_{GS}=\pm 8\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$	0.3	0.5	0.8	V
On state drain current	$I_{D(ON)}$	$V_{GS}=4.5\text{V}$, $V_{DS}=5\text{V}$	30			A
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=4.5\text{V}$, $I_D=7\text{A}$		21.6	26	$\text{m}\Omega$
		$T_J=125^\circ\text{C}$		29.2	36	$\text{m}\Omega$
		$V_{GS}=2.5\text{V}$, $I_D=5\text{A}$		26.4	33	$\text{m}\Omega$
		$V_{GS}=1.8\text{V}$, $I_D=4\text{A}$		33.3	42	$\text{m}\Omega$
Forward Transconductance	g_{FS}	$V_{DS}=5\text{V}$, $I_D=5\text{A}$		22		S
Diode Forward Voltage	V_{SD}	$I_S=1\text{A}$		0.76	1	V
Maximum Body-Diode Continuous Current	I_S				3	A
DYNAMIC PARAMETERS						
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS}=10\text{V}$, $f=1\text{MHz}$		1050		pF
Output Capacitance	C_{oss}			163		pF
Reverse Transfer Capacitance	C_{rss}			129		pF
Gate resistance	R_g	$V_{GS}=0\text{V}$, $V_{DS}=0\text{V}$, $f=1\text{MHz}$		4		Ω



SWITCHING PARAMETERS						
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=10V$ $I_D=7A$		15.2		nC
Gate Source Charge	Q_{gs}			1		nC
Gate Drain Charge	Q_{gd}			4		nC
Turn-On DelayTime	$t_{D(on)}$	$V_{GS}=5V, V_{DS}=10V$ $R_L=1.5\Omega, R_{GEN}=3\Omega$		6.5		ns
Turn-On Rise Time	t_r			9		ns
Turn-Off DelayTime	$t_{D(off)}$			56.5		ns
Turn-Off Fall Time	t_f			13.2		ns
Body Diode Reverse Recovery Time	t_{rr}	$I_F=5A, dI/dt=100A/\mu s$		21		ns
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=5A, dI/dt=100A/\mu s$		7.1		nC

A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$. The value in any given application depends on the user's specific board design. The current rating is based on the $t \leq 10s$ thermal resistance rating.

B: Repetitive rating, pulse width limited by junction temperature.

C. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

D. The static characteristics in Figures 1 to 6 are obtained using 80 μs pulses, duty cycle 0.5% max.

E. These tests are performed with the device mounted on 1 in² FR-4 board with 2oz. Copper, in a still air environment with $T_A=25^\circ C$. The SOA curve provides a single pulse rating.



6.1 Typical Characteristic

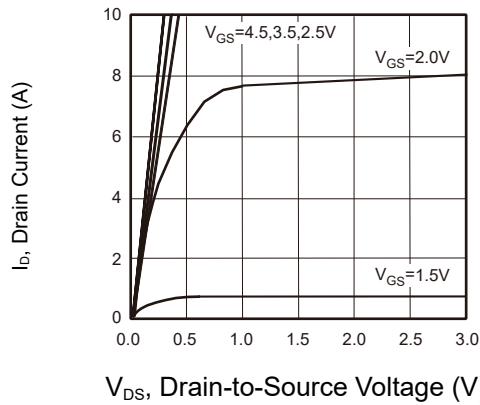


Fig 1: On-Region Characteristics

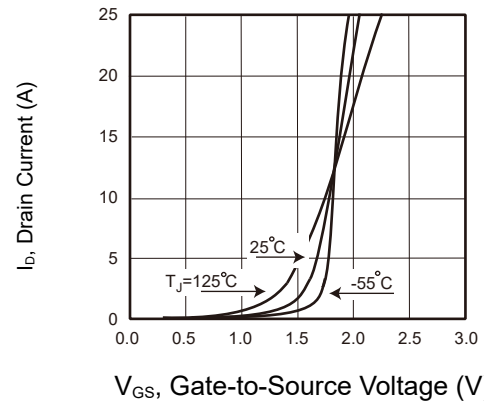


Figure 2: Transfer Characteristics

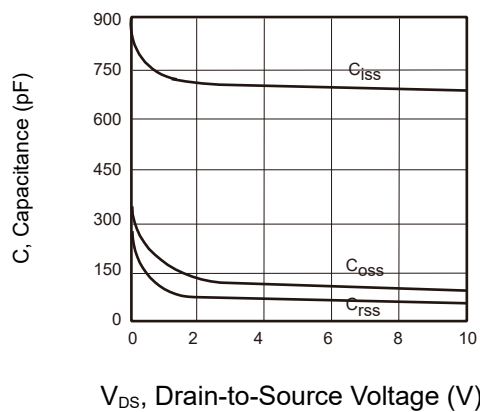


Figure 3: Capacitance

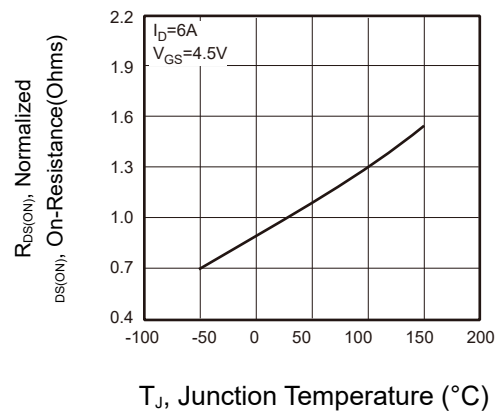


Figure 4: On-Resistance Variation with Temperature

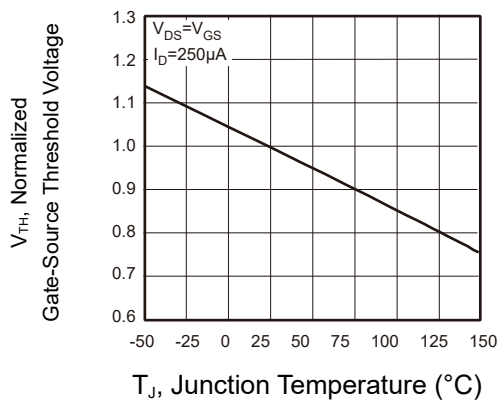


Figure 5: Gate Threshold Variation with Temperature

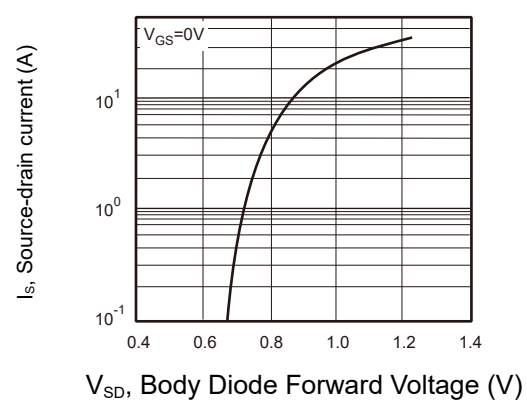
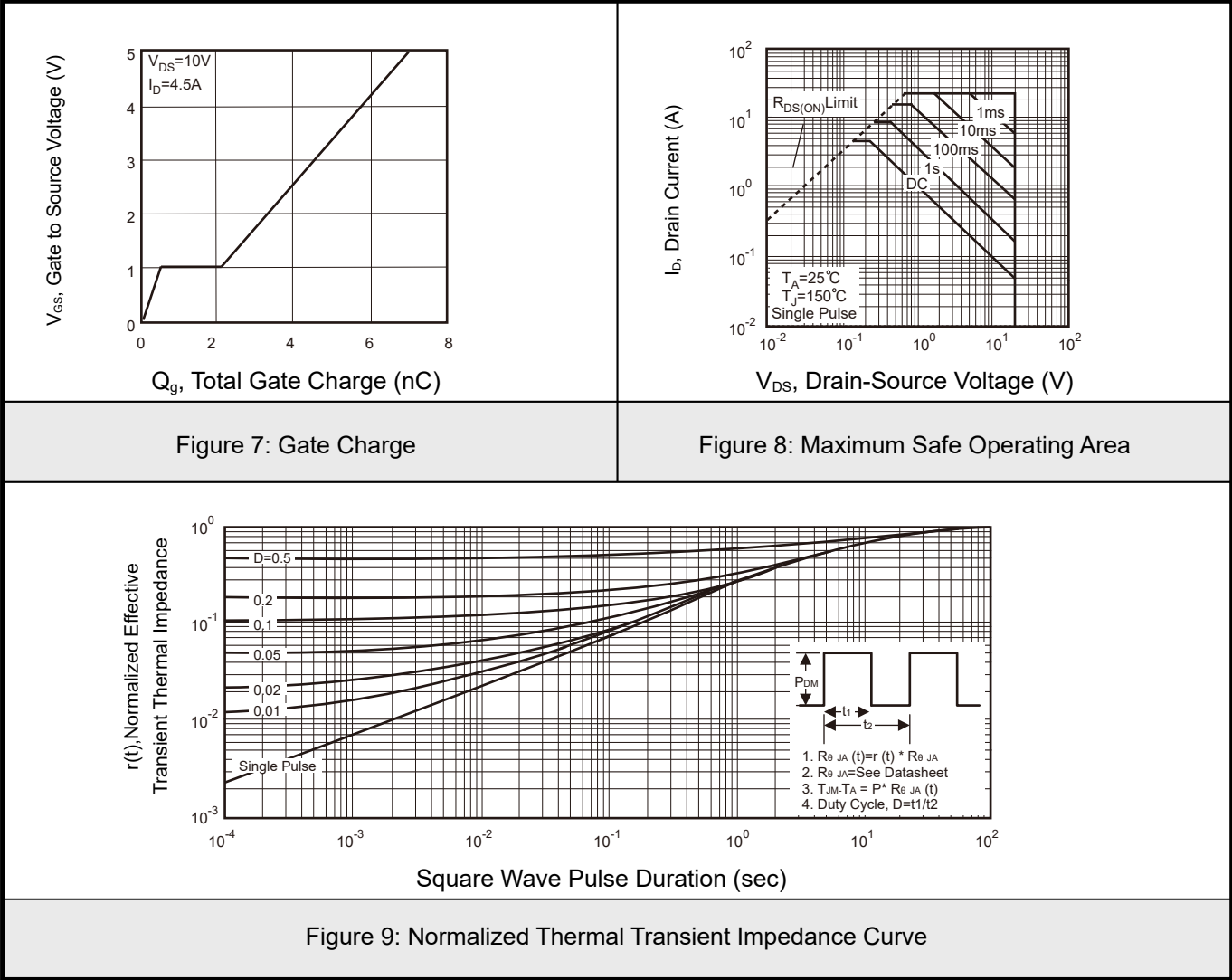


Figure 6: Body Diode Forward Voltage Variation with Source Current

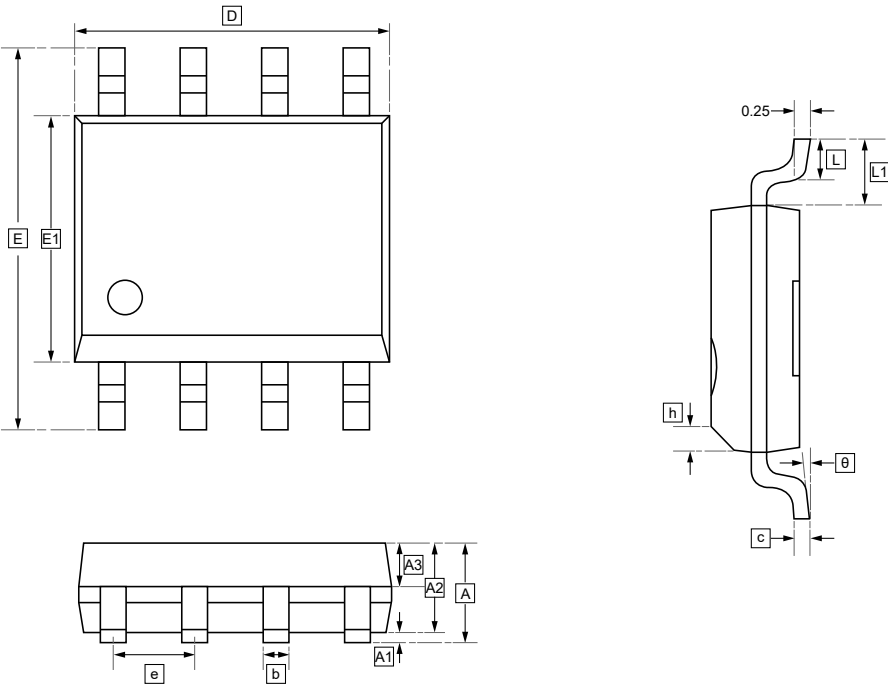


6.2 Typical Characteristic





7.SOP-8 Package Outline Dimensions



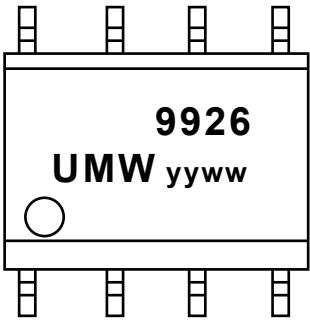
DIMENSIONS (mm are the original dimensions)

Symbol	A	A1	A2	A3	b	c	D	E	E1	e	h	L
Min	-	0.05	1.30	0.60	0.39	0.20	4.80	5.80	3.80	1.24	0.30	0.50
Max	1.75	0.20	1.50	0.70	0.47	0.24	5.00	6.20	4.00	1.30	0.50	0.80

Symbol	L1	θ
Min	1.00	0°
Max	1.10	8°



8.Ordering information



yy: Year Code
ww: Week Code

Order Code	Package	Base QTY	Delivery Mode
UMW CEM9926A	SOP-8	3000	Tape and reel



9.Disclaimer

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