

20V/6A Dual N-Channel MOSFET

Features

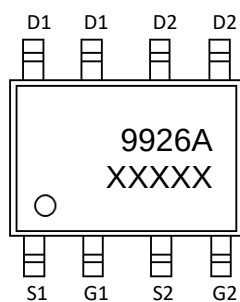
- Trench Power LV MOSFET technology
- High Power and current handing capability

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
20V	30m Ω @4.5V	6A
	45m Ω @2.5V	

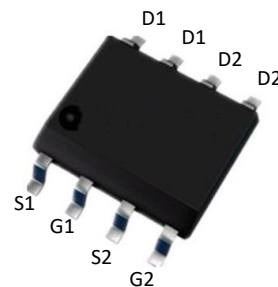
Application

- PWM application
- Load Switch

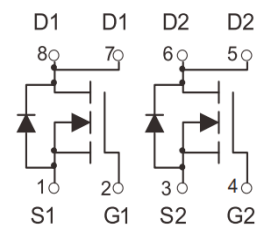


9926A : Device code
XXXXX : Code

Marking and pin assignment



SOP-8 top view



Schematic diagram

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	20	V
V_{GS}	Gate-Source Voltage	± 12	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_c=25^\circ\text{C}$ 6	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ 33	A
I_D	Continuous Drain Current@GS=10V	$T_c=25^\circ\text{C}$ 6	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 1.25	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient>(*1 in2 Pad of 2-oz Copper), Max.)	125	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=250μA	20	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=20V, VGS=0V	--	--	1	uA
IGSS	Gate-Body Leakage Current	VGS=±12V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	0.45	0.7	1.2	V
RDS(on)	Drain-Source On-State Resistance	VGS=4.5V, ID=6A	--	20	30	mΩ
		VGS=2.5V, ID=5A	--	28	45	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=10V, VGS=0V, f=1MHz	--	640	--	pF
COSS	Output Capacitance		--	140	--	pF
CRSS	Reverse Transfer Capacitance		--	83	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=10V, ID=3A, VGS=4.5V	--	10	--	nC
Qgs	Gate Source Charge		--	1.5	--	nC
Qgd	Gate Drain Charge		--	1.5	--	nC
td(on)	Turn-on Delay Time	VDS=10V, ID=1A, VGS=4.5V, RG=6Ω	--	8	--	nS
tr	Turn-on Rise Time		--	9	--	nS
td(off)	Turn-Off Delay Time		--	15	--	nS
tf	Turn-Off Fall Time		--	5	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25℃, Is=3A,	--	--	1.2	V

Typical Operating Characteristics

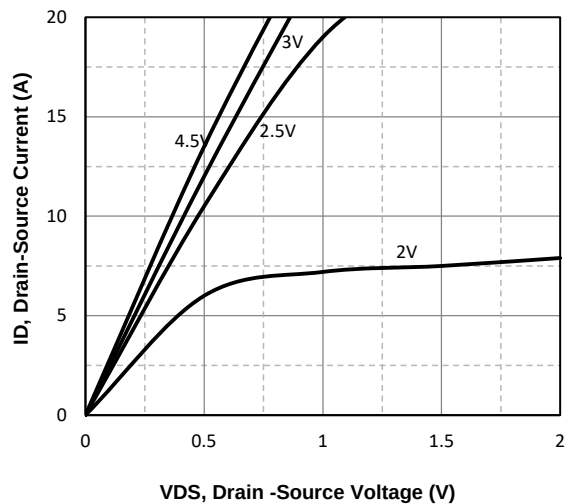


Fig1. Typical Output Characteristics

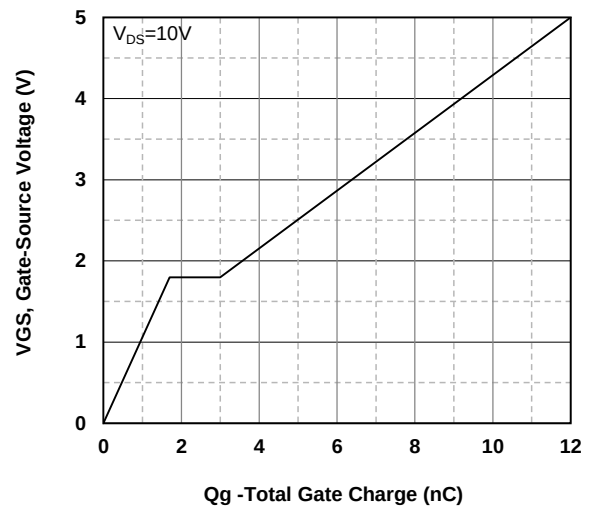


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

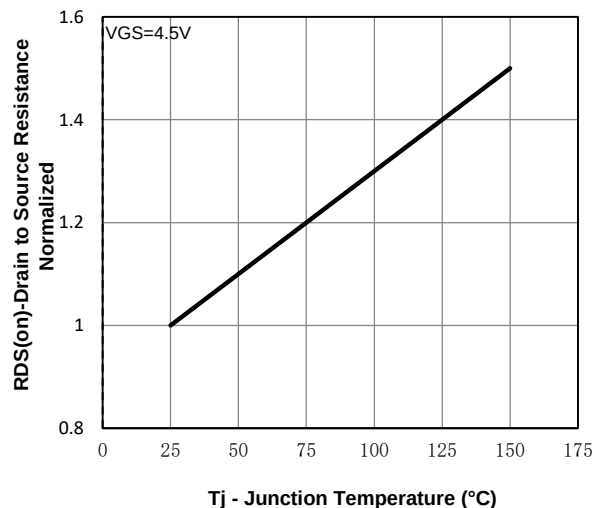


Fig3. Normalized On-Resistance Vs. Temperature

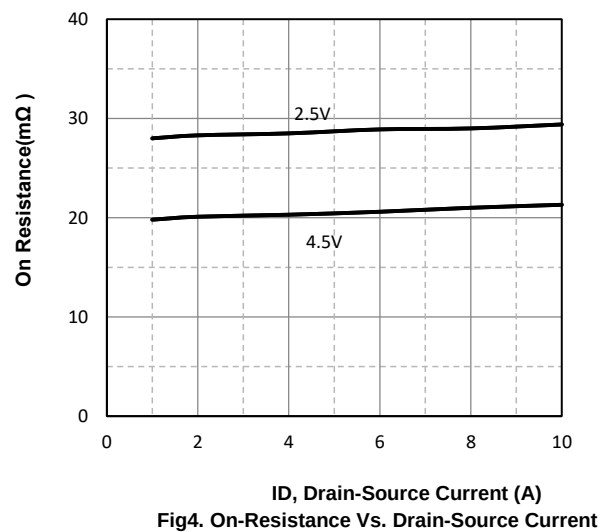


Fig4. On-Resistance Vs. Drain-Source Current

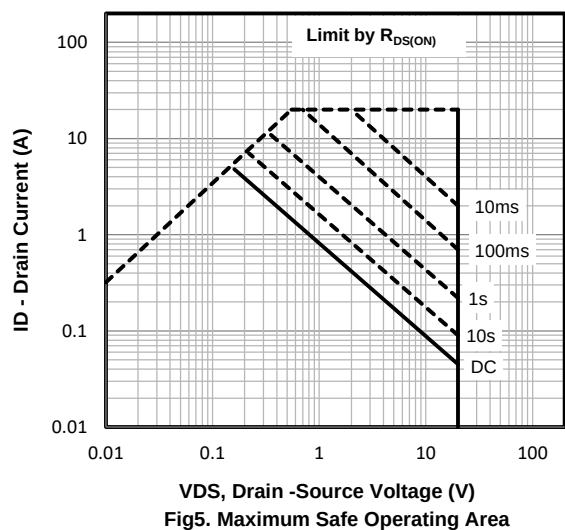


Fig5. Maximum Safe Operating Area

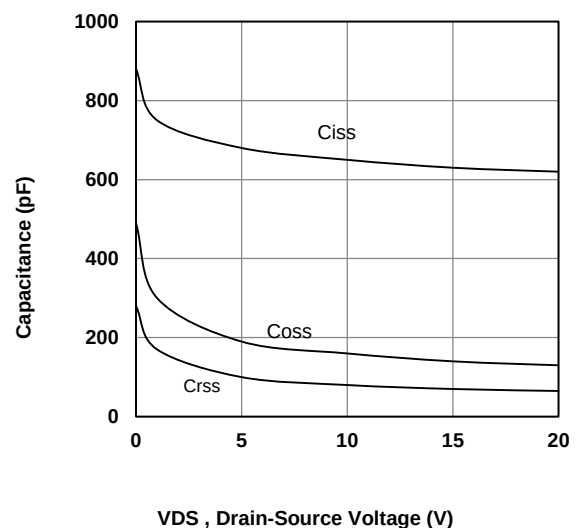
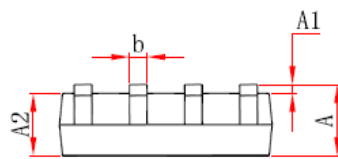
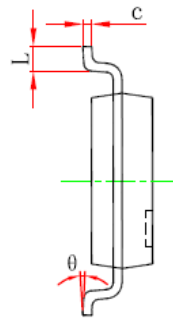
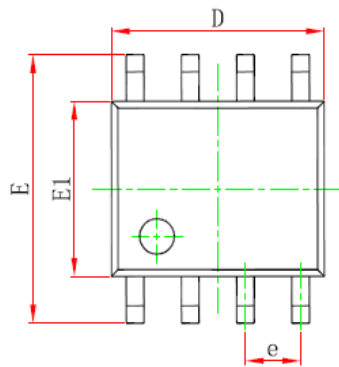


Fig6 Typical Capacitance Vs. Drain-Source Voltage

SOP-8 Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.700	5.100	0.185	0.201
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°