

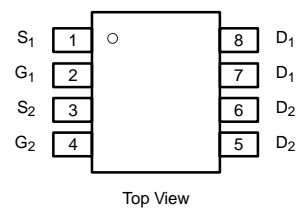
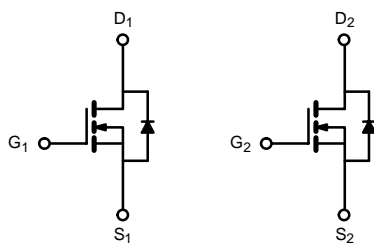
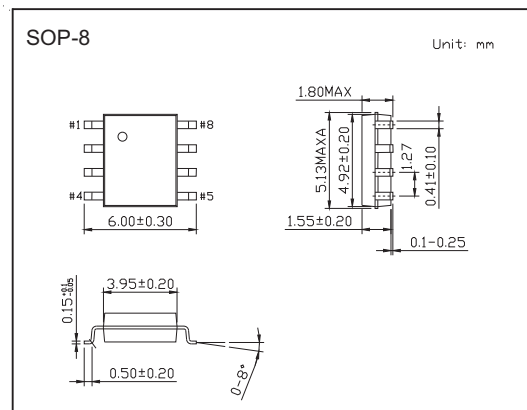
## Dual N-Channel MOSFET

## SI9926DY

## Features

$R_{DS(on)}$  0.032  $\Omega$  @  $V_{GS} = 4.5\text{ V}$

$R_{DS(on)}$  0.045  $\Omega$  @  $V_{GS} = 2.5\text{ V}$ .

Absolute Maximum Ratings  $T_A = 25^\circ\text{C}$ 

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	20	V	
Gate-Source Voltage	$V_{GS}$	$\pm 10$	V	
Continuous Drain Current	$I_D$	6.5	A	
Pulsed Drain Current	$I_{DM}$	20	A	
Maximum Power Dissipation	$P_D$	$T_A = 25^\circ\text{C}$	2	W
		$T_A = 70^\circ\text{C}$	1.3	W
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$	
Junction temperature and Storage temperature	$T_j, T_{stg}$	-55 to +150	$^\circ\text{C}$	

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Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250 μA	20			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> = 16V, V <sub>GS</sub> = 0V			1	μA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA	0.5	1	1.5	V
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±8V			±100	nA
Drain-Source On-State Resistance *	R <sub>DS(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6.5A		0.026	0.032	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 5.4A		0.037	0.045	
On-State Drain Current *	I <sub>D(on)</sub>	V <sub>DS</sub> = 5V, V <sub>GS</sub> = 4.5V	15			A
Forward Transconductance *	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 3A		11		S
Input Capacitance	C <sub>iss</sub>	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0 V, f = 1.0 MHz		700		pF
Output Capacitance	C <sub>oss</sub>			175		pF
Reverse Transfer Capacitance	C <sub>rss</sub>			85		pF
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 10V, V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 3A		7	10	nC
Gate-Source Charge	Q <sub>gs</sub>			1.2		
Gate-Drain Charge	Q <sub>gd</sub>			1.9		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 10V I <sub>D</sub> = 1A, V <sub>GS</sub> = 4.5V, R <sub>G</sub> = 6 Ω		8	16	ns
Rise Time	t <sub>r</sub>			10	18	
Turn-Off Delay Time	t <sub>d(off)</sub>			18	29	
Fall Time	t <sub>f</sub>			5	10	
Maximum Continuous Drain-Source Diode Forward Current	I <sub>S</sub>				1.3	A
Diode Forward Voltage *	V <sub>SD</sub>	I <sub>S</sub> = 1.3A, V <sub>GS</sub> = 0 V		0.65	1.2	V

\* Pulse test; pulse width 300 μs, duty cycle 2%.