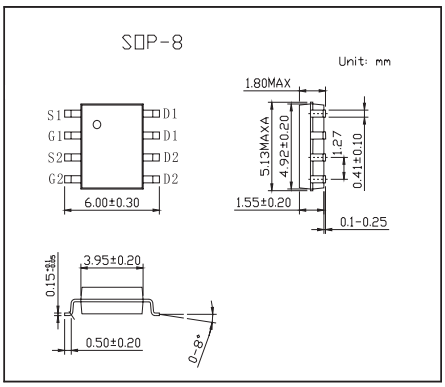
Dual N-Channel 2.5-V (G-S) MOSFET

SI9926



■ Features

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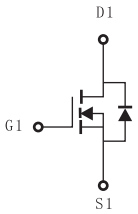
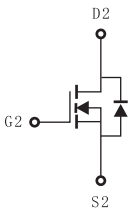


N-Channel MOSFET



N-Channel MOSFET

■ Absolute Maximum Ratings T_A=25℃

Parameter	Symbol	10 secs	Steady state	Unit
Drain-source Voltage	V_{DS}	20		V
Gate-source Voltage	V_{GS}	±12		V
pulsed Drain Current	I_{DM}	30		A
Continuous Drain Current (T_J = 150℃) [a] T_A = 25℃ T_A = 70℃	I_D	6 5	4.8 3.8	A
Maximum Power Disspation[a] T_A = 25℃ T_A = 70℃	P_D	2.0 1.3	1.25 0.8	W
Continuous Source Current (Diode Conduction)[a]	Is	1.7	1	A
Operating Junction and Storage temperature Range	Tj Tstg	-55 to +150		℃

■ Thermal Resistance Ratings

Parameter		Symbol	Typical	Maximum	Unit
Maximum Junction-to-Ambient[a]	t ⩽ 10 sec Steady State	R_{thJA}	50 80	62.5 100	℃/ W
Maximum Junction-to-Foot (Drain)	Steady State	R_{thJF}	30	40	

Notes

a. Surface Mounted on 1"x1" FR4 Board.

SI9926

■ Electrical Characteristics T_A=25℃±3℃

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Unit
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DC} = V_{GS} , I_D = 250 uA	0.6			V
Gate-Body Leakage Current, Reverse	I_{GSS}	V_{GS} = ±12 V, V_{DS} = 0			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{GS} = 0, V_{DS} = 20 V V_{GS} = 0, V_{DS} = 20 V,T_J = 55℃			1 25	uA
On-State Drain Current*1	$I_{D(ON)}$	V_{DC}≥5 V, V_{GS} = 4.5 V	20			A
Static Drain-Source On-State Resistance *1	$R_{ds(on)}$	V_{GS} = 4.5 V, I_D = 6A V_{GS} = 2.5 V, I_D = 5A		0.023 0.030	0.030 0.040	Ω
Forward Transconductance *1	G_{FS}	V_{DS} =15V, I_D = 6A		22		S
Diode Forward On-Voltage *1	V_{SD}	I_S = 1.7 mA, V_{GS} = 0 V		0.7	1.2	V
Total Gate Charge	Qg	V_{DS} = 15 V, V_{GS} = 4.5 V,I_D= 6A		13	20	nc
Gate-Source Charge	Qgs			3		
Gate-Drain Charge	Qgd			3.3		
Turn-On Delay Time	td(on)	V_{DD}=15V,I_D = 1A,RL = 15 Ω V_{GEN} = 4.5 V,R_G = 6Ω		22	35	ns
Rise Time	tr			40	60	
Turn-Off Delay Time	td(off)			50	75	
Fall Time	tf			20	30	
Source-Drain Reverse Recovery Time	trr	I_F = 1.7A, di/dt = 100 A/us		40	80	

*1pulse width ≤300μs, duty cycle≤2%