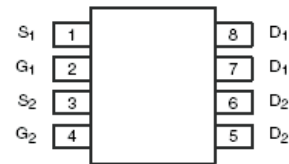
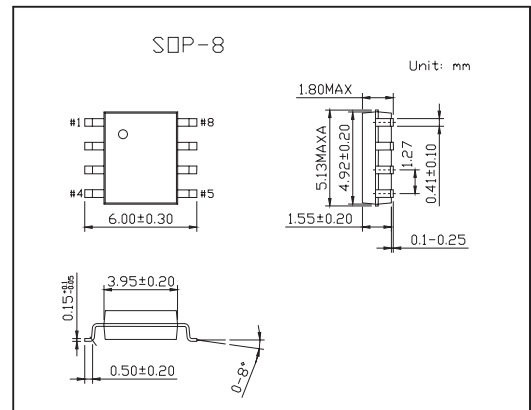
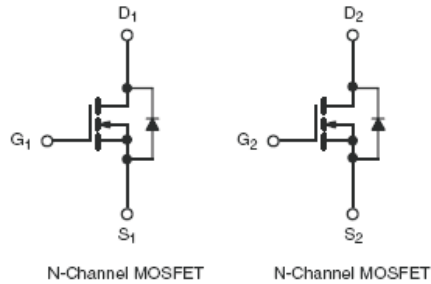




## Dual N-Channel MOSFET 9926B

### ■ Features

- 6.5A, 20 V.  $r_{DS(on)} = 0.022 \Omega @ V_{GS} = 4.5 V$
- 5.5A, 20 V  $r_{DS(on)} = 0.035 \Omega @ V_{GS} = 2.5 V$ .



### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	10 secs	Steady State	Unit
Drain-Source Voltage	$V_{DS}$	20		V
Gate-Source Voltage	$V_{GS}$	$\pm 10$		V
Continuous Drain Current $T_a=25^\circ C$	$I_D$	6.5		A
Pulsed Drain Current	$I_{DM}$	30		A
Maximum Power Dissipation $T_A = 25^\circ C$ $T_A = 70^\circ C$	$P_D$	2.0	1.25	W
		1.3	0.8	

### ■ Thermal Resistance Ratings

Parameter	Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient*	$R_{thJA}$	$t \leq 10 \text{ sec}$	50	62.5
		Steady State	80	
Maximum Junction-to-Foot (Drain)	$R_{thJF}$	30	40	$^\circ C/W$

\* Surface Mounted on 1" X 1"FR4 Board.



■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	V <sub>GS</sub> = 0 V, I <sub>D</sub> = 250 μ A	20			V
Zero Gate Voltage Drain Current	I <sub>BSS</sub>	V <sub>DS</sub> = 16V, V <sub>GS</sub> = 0V			1	uA
Gate-Body Leakage	I <sub>GSS</sub>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±10V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250uA	0.5		1.0	V
Drain-Source On-State Resistance *	r <sub>Ds(on)</sub>	V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6.5A		0.020	0.022	Ω
		V <sub>GS</sub> = 2.5V, I <sub>D</sub> = 5.5A		0.033	0.035	
On-State Drain Current *	I <sub>D(on)</sub>	V <sub>DS</sub> ≥ 5V, V <sub>GS</sub> = 4.5V	20			A
Forward Transconductance *	g <sub>fs</sub>	V <sub>DS</sub> = 5V, I <sub>D</sub> = 6.5A	9			V
Total Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 6A		13	20	nC
Gate-Source Charge	Q <sub>gs</sub>			3		
Gate-Drain Charge	Q <sub>gd</sub>			3.3		
Turn-On Delay Time	t <sub>d(on)</sub>	V <sub>DD</sub> = 15V I <sub>D</sub> = 1A, V <sub>GS</sub> = 4.5V, R <sub>G</sub> = 6 Ω, R <sub>L</sub> = 15 Ω		2	35	ns
Rise Time	t <sub>r</sub>			40	60	
Turn-Off Delay Time	t <sub>d(off)</sub>			50	75	
Fall Time	t <sub>f</sub>			20	30	
Maximum Continuous Drain-Source Diode Forward Current	I <sub>S</sub>				1	A
Diode Forward Voltage *	V <sub>SD</sub>	I <sub>S</sub> = 1.7A, V <sub>GS</sub> = 0 V		0.7	1.2	V

\* Pulse test; pulse width ≤ 300 μ s, duty cycle ≤ 2 %.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

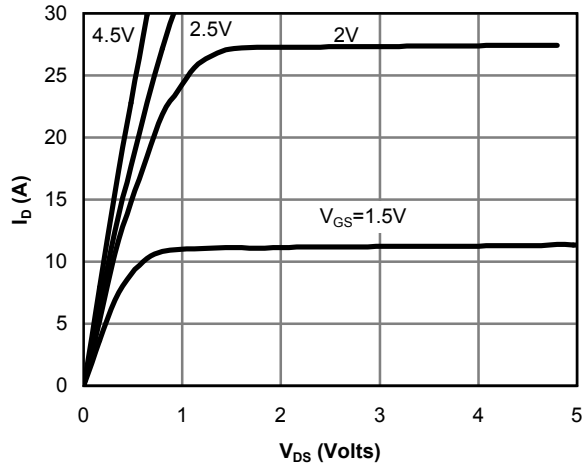


Fig 1: On-Region Characteristics

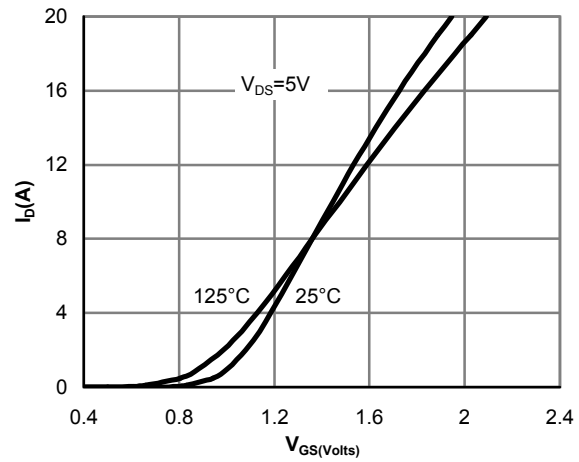


Figure 2: Transfer Characteristics

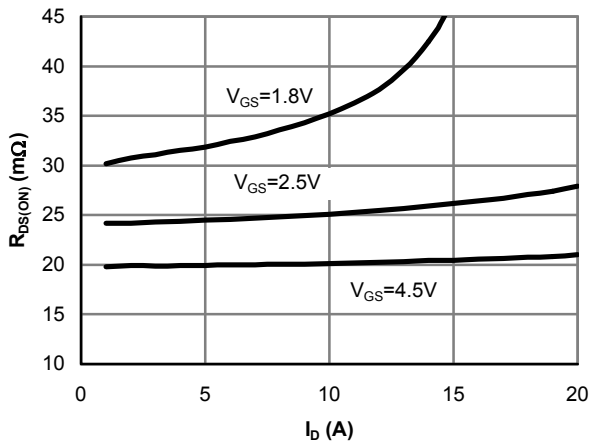


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

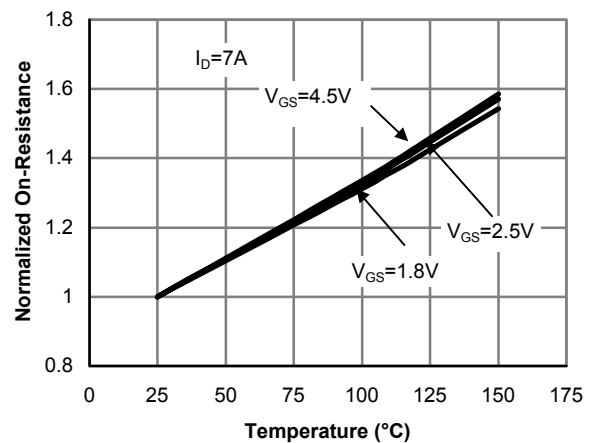


Figure 4: On-Resistance vs. Junction Temperature

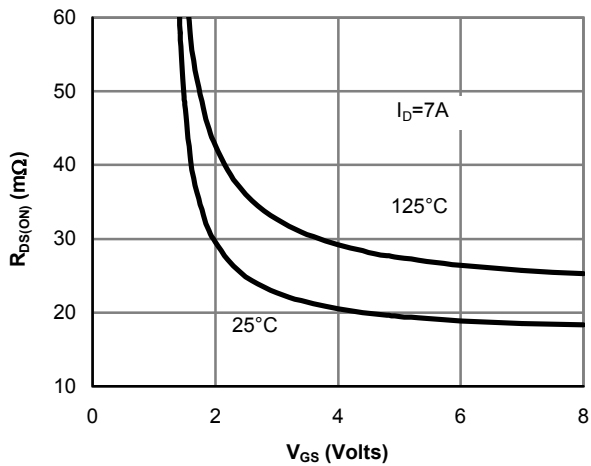


Figure 5: On-Resistance vs. Gate-Source Voltage

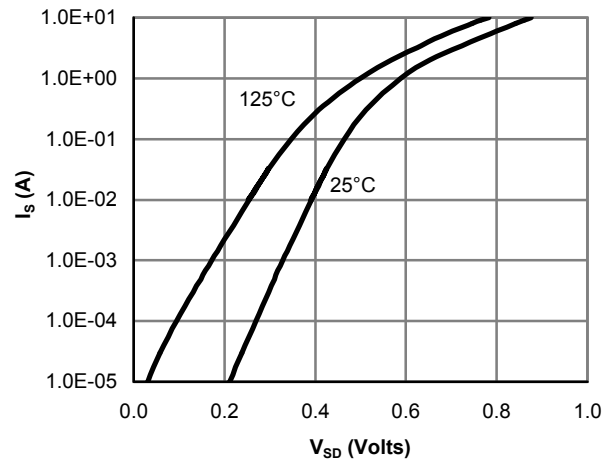


Figure 6: Body-Diode Characteristics

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

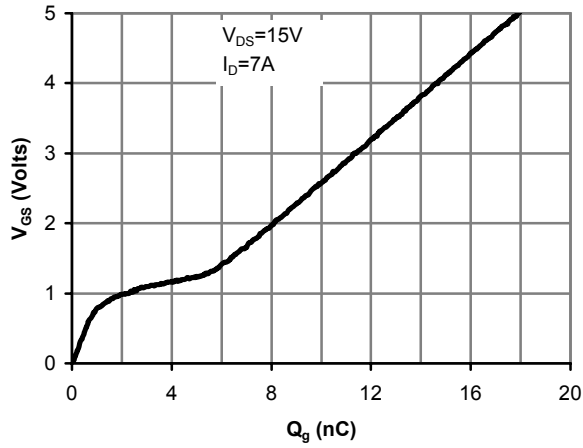


Figure 7: Gate-Charge Characteristics

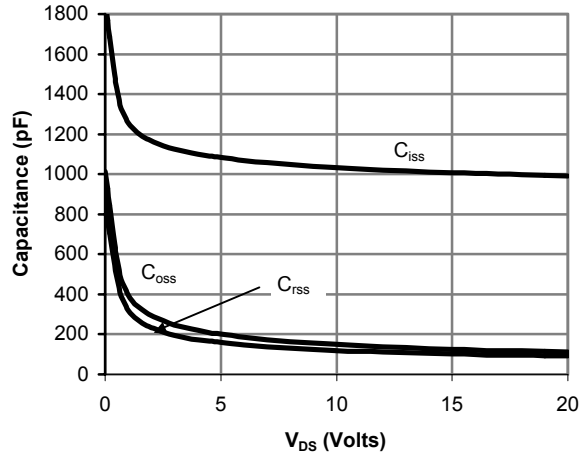


Figure 8: Capacitance Characteristics

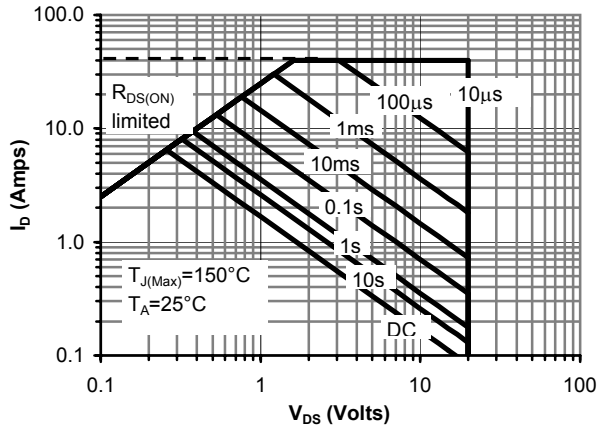


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

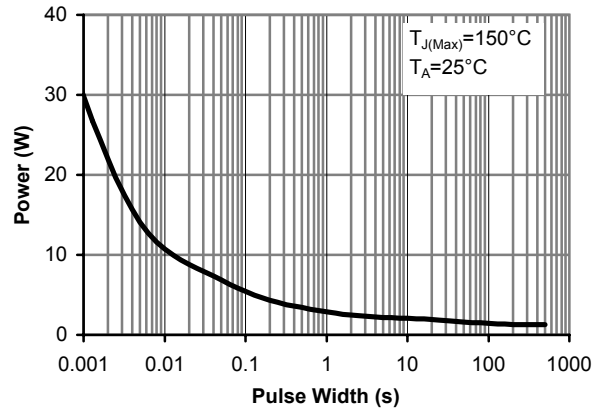


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

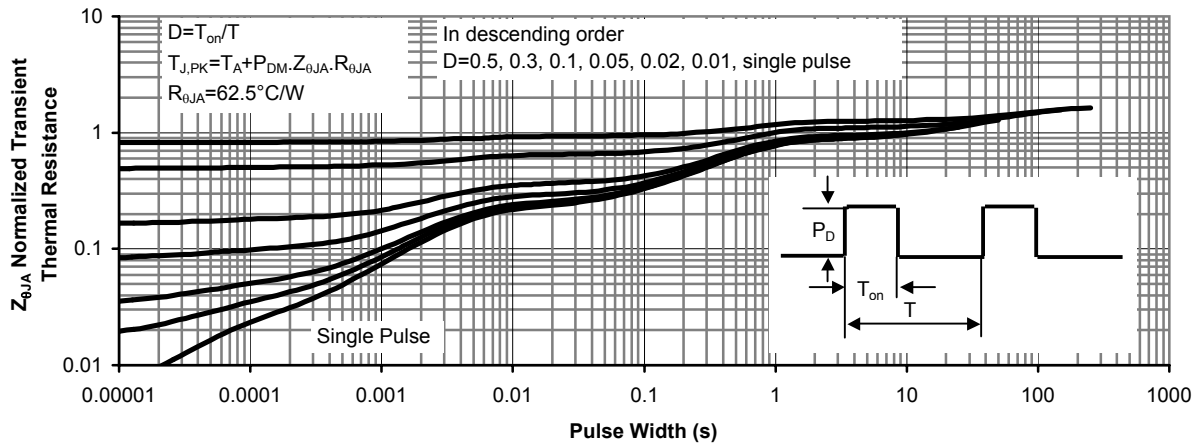


Figure 11: Normalized Maximum Transient Thermal Impedance