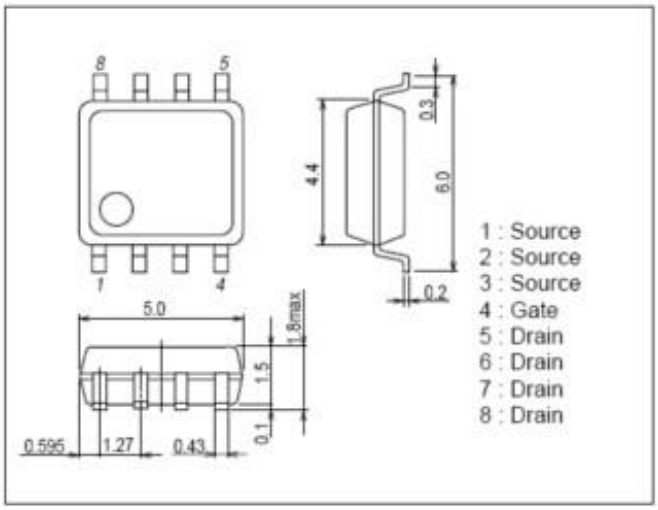
HM4892B

Features

- Low On resistance.
- 4.5V drive.
- RoHS compliant.

Package Dimensions

SOP-8



Specifications

Absolute Maximum Ratings at T_a=25^{0}C

Parameter	Symbol	Conditions	Ratings	Unit
Drain-to-Source Voltage	V_{DSS}		100	V
Gate-to-Source Voltage	V_{GSS}		±20	V
Drain Current (DC)	I_D		8	A
Drain Current (Pulse)	I_{DP}	PW≤10uS, duty cycle≤1%	32	A
Allowable Power Dissipation	P_D	Mounted on a ceramic board (1000mm^2×0.8mm) 1unit	3.1	W
Total Dissipation	P_T	Mounted on a ceramic board (1000mm^2×0.8mm)	2.0	W
Channel Temperature	T_{ch}		150	^{0}C
Storage Temperature	T_{stg}		-55~+150	^{0}C

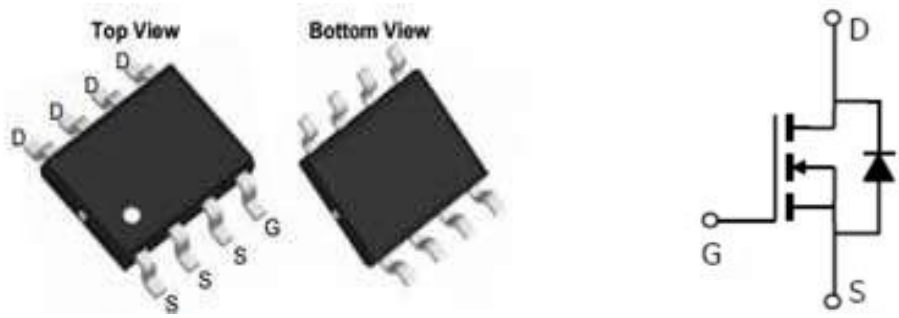
Electrical Characteristics at T_a=25^{0}C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Drain-to-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D=250uA, V_{GS}=0V	100	-	-	V
Zero-Gate Voltage Drain Current	I_{DSS}	$V_{DS=100}$V, V_{GS}=0V	-	-	1	uA
Gate-to-Source Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V	-	-	±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=250uA	1.6	2.15	2.7	V
Static Drain-to-Source On-State Resistance	$R_{DS(ON)}$	I_D=8A, V_{GS}=10V	-	26	32	mΩ
	$R_{DS(ON)}$	I_D=6A, V_{GS}=4.5V	-	24	38	mΩ
Input Capacitance	C_{iss}	V_{DS}=50V, V_{GS}=0V, f=1MHz	-	2260	-	pF
Output Capacitance	C_{oss}	V_{DS}=50V, V_{GS}=0V, f=1MHz	-	95	-	pF
Reverse Transfer Capacitance	C_{rss}	V_{DS}=50V, V_{GS}=0V, f=1MHz	-	7	-	pF

Electrical Characteristics at T_a=25^{0}C (Continued)

Parameter	Symbol	Conditions	Ratings			Unit
			min	Typ	max	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=10V, V_{DS}=50V, R_L=6.25Ω R_{GEN}=3Ω	-	7	-	nS
Rise Time	t_r		-	3	-	nS
Turn-off Delay Time	$t_{d(off)}$		-	20	-	nS
Fall Time	t_f		-	3	-	nS
Total Gate Charge	Q_g	V_{DS}=50V, V_{GS}=10V, I_D=8A	-	7	12	nC
Gate-to-Source Charge	Q_{gs}		-	4.5	-	nC
Gate-to-Drain “Miller” Charge	Q_{gd}		-	2.5	-	nC
Diode Forward Voltage	V_{SD}	I_S=3.7A, V_{GS}=0V	-	-	1.2	V

Pin Description



Typical Characteristics at T_a=25°C

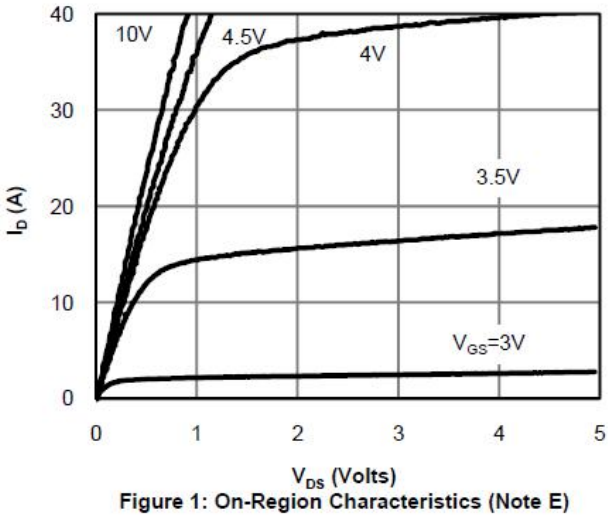


Figure 1: On-Region Characteristics (Note E)

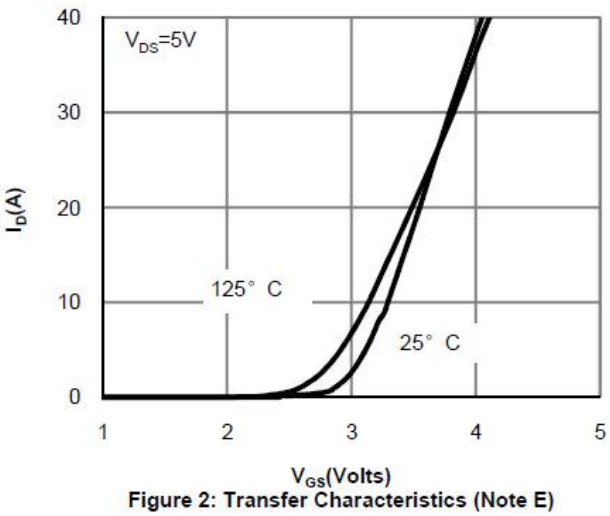


Figure 2: Transfer Characteristics (Note E)

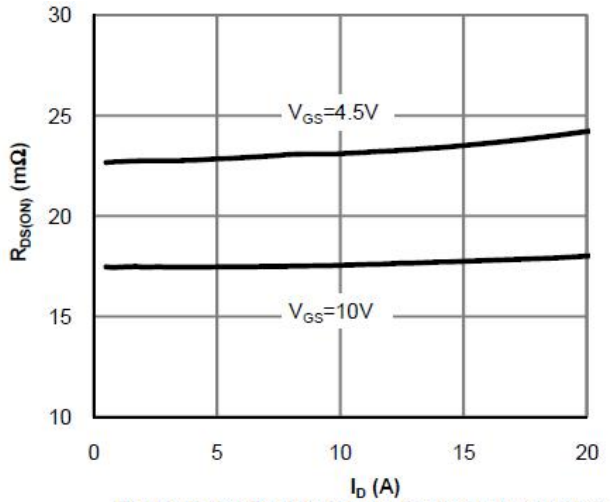


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

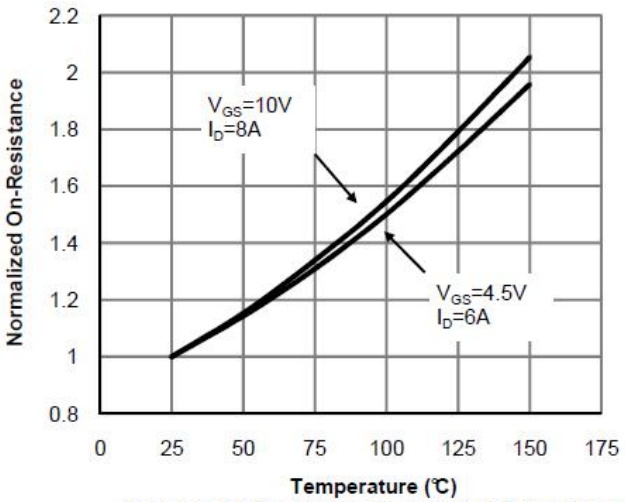


Figure 4: On-Resistance vs. Junction Temperature (Note E)

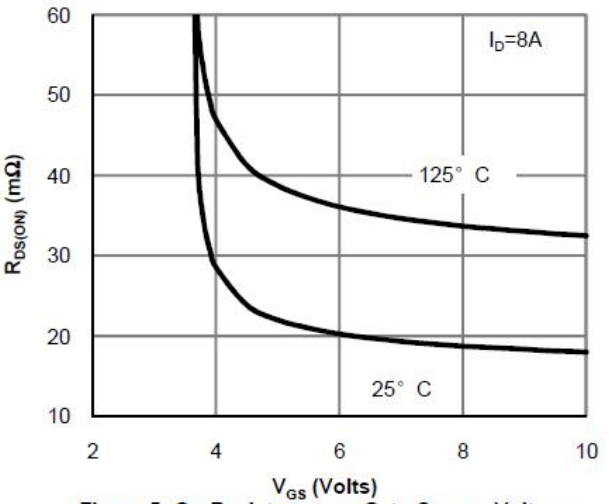


Figure 5: On-Resistance vs. Gate-Source Voltage

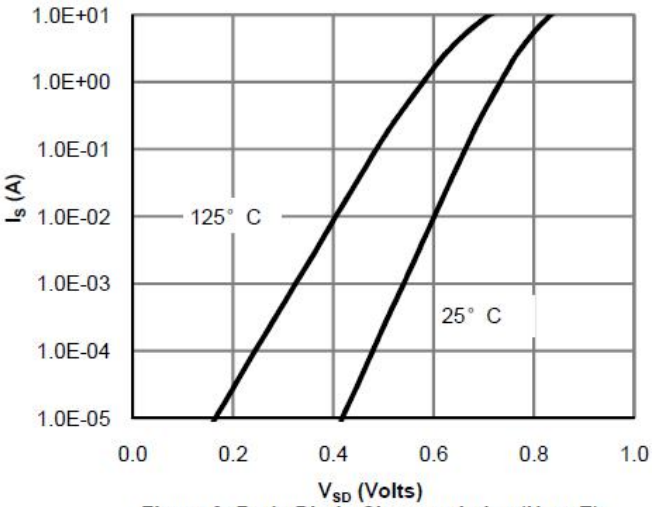


Figure 6: Body-Diode Characteristics (Note E)

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

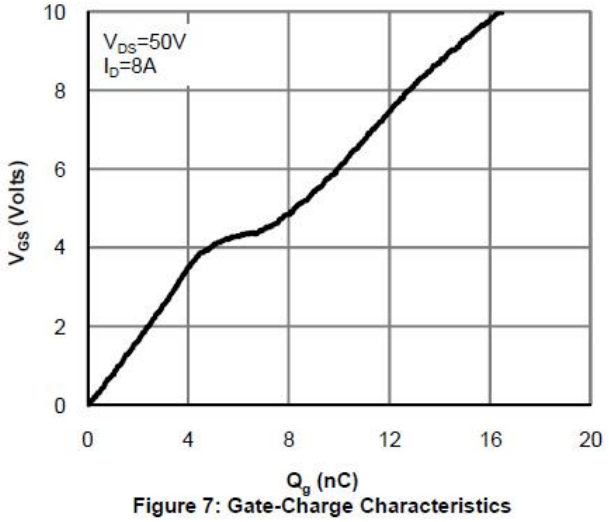


Figure 7: Gate-Charge Characteristics

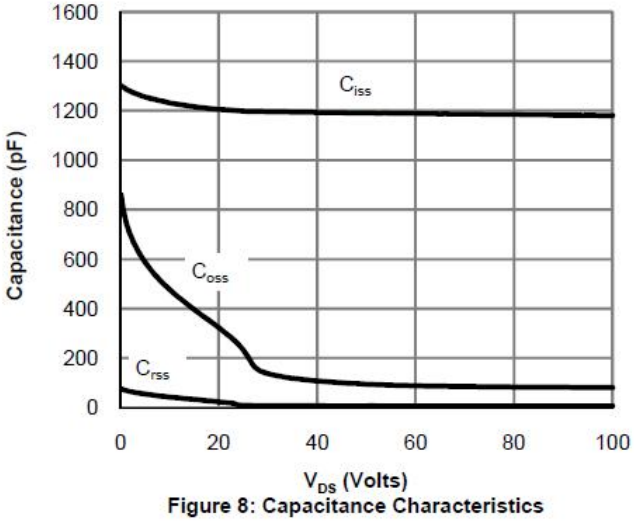


Figure 8: Capacitance Characteristics

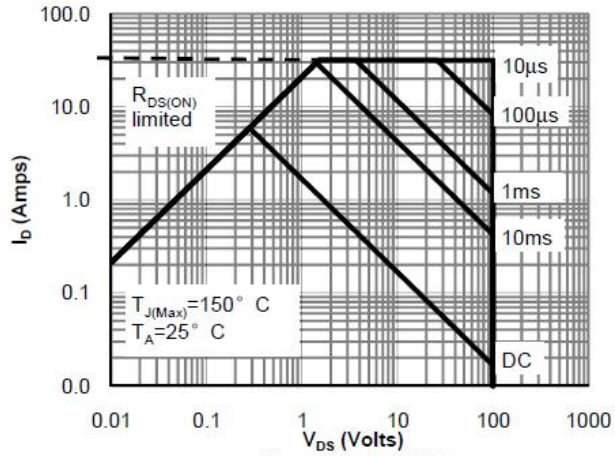


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

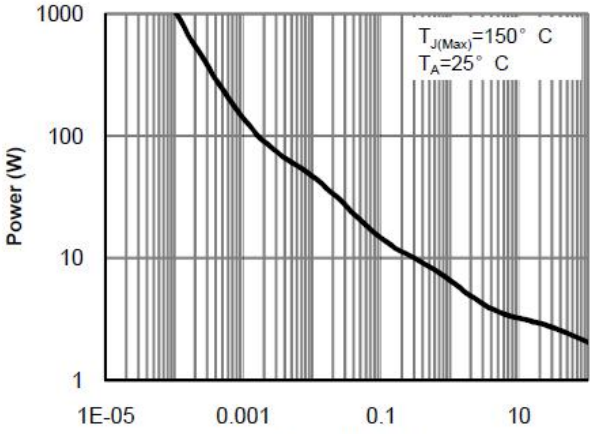


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

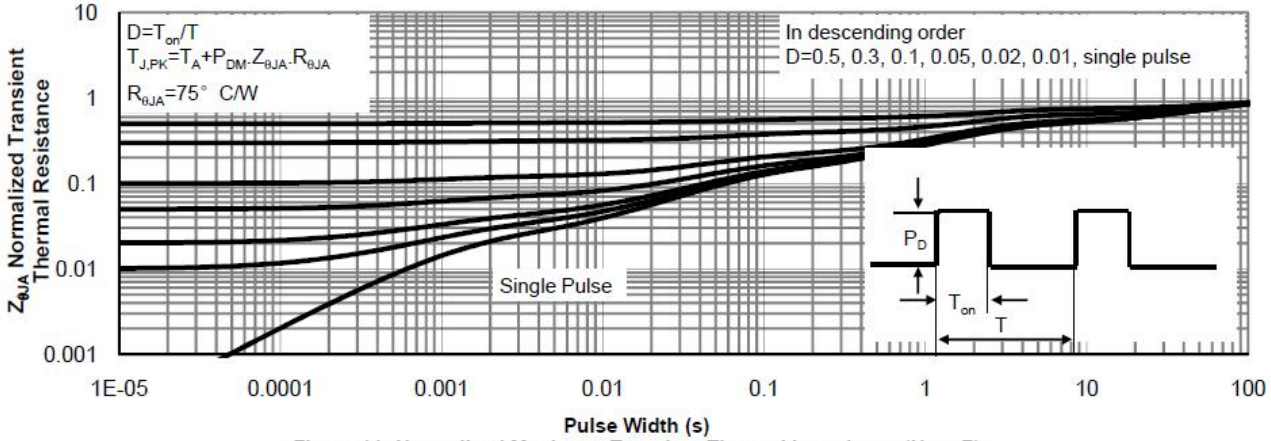


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)