



CST4892 Dual N-Ch 100V Fast Switching MOSFETs

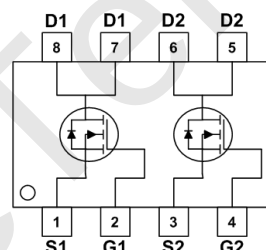
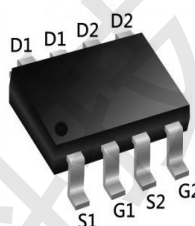
- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

CST4892 Product Summary



BVDSS	RDS(on)	ID
100V	68mΩ	10.0 A

CST4892 SOP8 Pin Configuration



CST4892 Description

The CST4892 is the high cell density trench N-ch MOSFETs, which provide excellent RDS(on) and gate charge for most of the synchronous buck converter applications.

The CST4892 meet the RoHS and Green Product requirement with full function reliability approved.

CST4892 Absolute Maximum Ratings (T_A = 25°C, unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain-Source Voltage		V _{DS}	100	V
Gate-Source Voltage		V _{GS}	±20	V
Continuous Drain Current	T _A =25°C	I _D	10	A
	T _A =100°C		3.5	
Pulsed Drain Current ¹		I _{DM}	16	A
Single Pulse Avalanche Energy ²		E _{AS}	3.2	mJ
Total Power Dissipation	T _A =25°C	P _D	3.1	W
Operating Junction and Storage Temperature Range		T _J , T _{STG}	-55 to 150	°C

CST4892 Thermal Characteristics

Parameter	Symbol	Value	Unit
Thermal Resistance from Junction-to-Ambient ³	R _{θJA}	40.3	°C/W



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CST4892 Electrical Characteristics ($T_J = 25^\circ\text{C}$, unless otherwise noted)

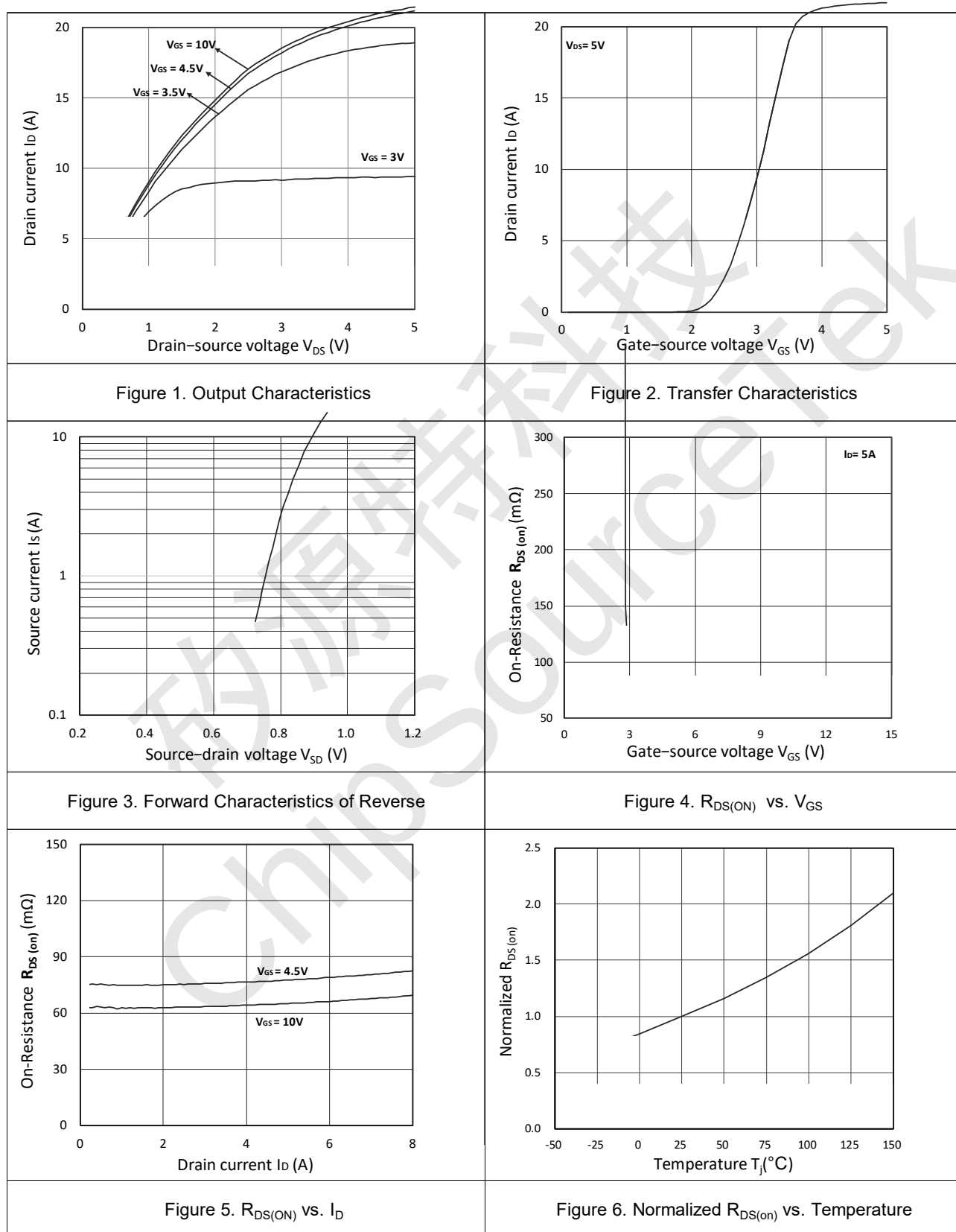
Parameter		Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Characteristics							
Drain-Source Breakdown Voltage		V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	100	-	-	V
Gate-Body Leakage Current		I _{GSS}	V _{DS} = 0V, V _{GS} = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	T _J =25°C	I _{DSS}	V _{DS} =100V, V _{GS} = 0V	-	-	1	μA
	T _J =100°C			-	-	100	
Gate-Threshold Voltage		V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1	1.7	3	V
Drain-Source on-Resistance ⁴		R _{DS(on)}	V _{GS} = 10V, I _D = 4A	-	68	100	mΩ
			V _{GS} = 4.5V, I _D = 2A	-	78	110	
Forward Transconductance ⁴		g _{fs}	V _{DS} =10V , I _D =4A	-	11	-	S
Dynamic Characteristics ⁵							
Input Capacitance		C _{iss}	V _{DS} = 50V, V _{GS} =0V, f =1MHz	-	1233	-	pF
Output Capacitance		C _{oss}		-	32	-	
Reverse Transfer Capacitance		C _{rss}		-	26	-	
Gate Resistance		R _g	f =1MHz	-	1.4	-	Ω
Switching Characteristics ⁵							
Total Gate Charge		Q _g	V _{GS} = 10V, V _{DS} = 50V, I _D =4A	-	12	-	nC
Gate-Source Charge		Q _{gs}		-	2.9	-	
Gate-Drain Charge		Q _{gd}		-	1.8	-	
Turn-on Delay Time		t _{d(on)}	V _{GS} =10V, V _{DD} =50V, R _G = 3Ω, I _D = 4A	-	3.9	-	ns
Rise Time		t _r		-	26	-	
Turn-off Delay Time		t _{d(off)}		-	16.2	-	
Fall Time		t _f		-	8.9	-	
Body Diode Reverse Recovery Time		t _{rr}	I _F = 4A, dI/dt=100A/μs	-	40	-	ns
Body Diode Reverse Recovery Charge		Q _{rr}		-	43	-	nC
Drain-Source Body Diode Characteristics							
Diode Forward Voltage ⁴		V _{SD}	I _S = 1A, V _{GS} = 0V	-	-	1.2	V
Continuous Source Current	T _A =25°C	I _S	-	-	-	10	A

Notes:

1. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)} = 150^\circ\text{C}$.
2. The EAS data shows Max. rating . The test condition is $V_{DD} = 25V, V_{GS} = 10V, L = 0.1mH, I_{AS} = 8A$.
3. The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper, The value in any given application depends on the user's specific board design.
4. The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
5. This value is guaranteed by design hence it is not included in the production test..



CST4892 Typical Characteristics





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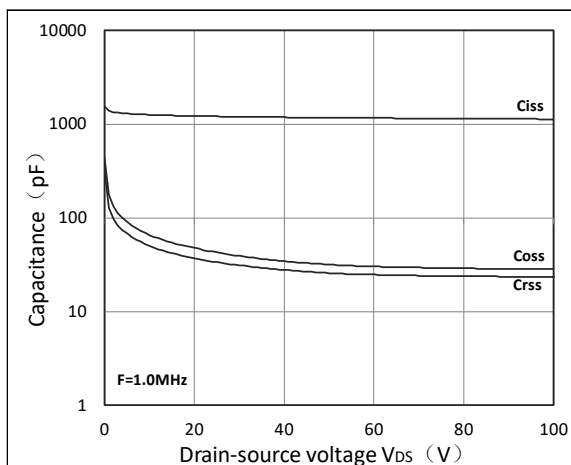


Figure 7. Capacitance Characteristics

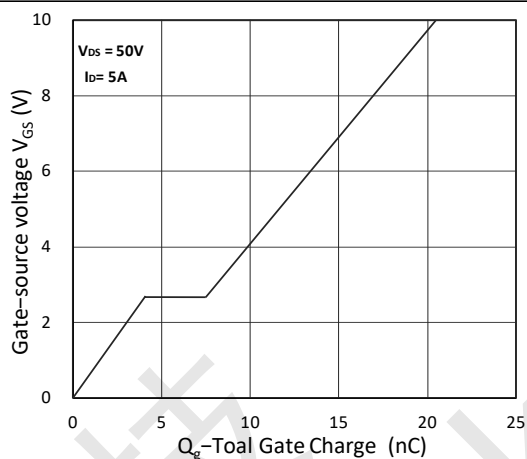


Figure 8. Gate Charge Characteristics

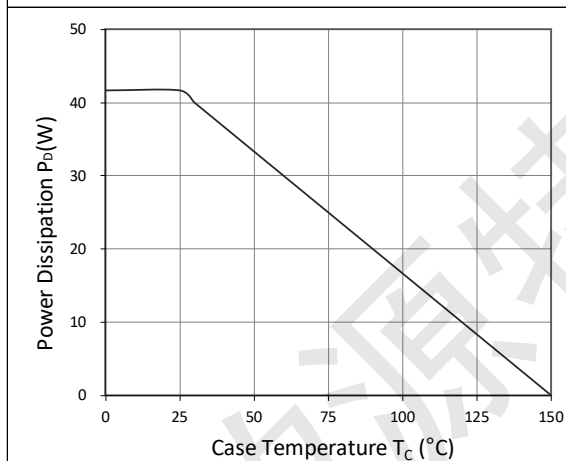


Figure 9. Power Dissipation

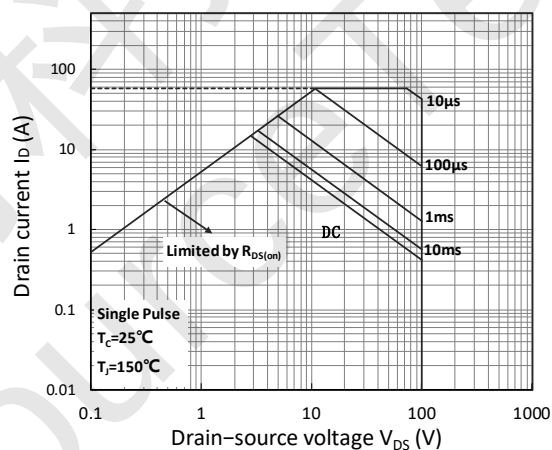


Figure 10. Safe Operating Area

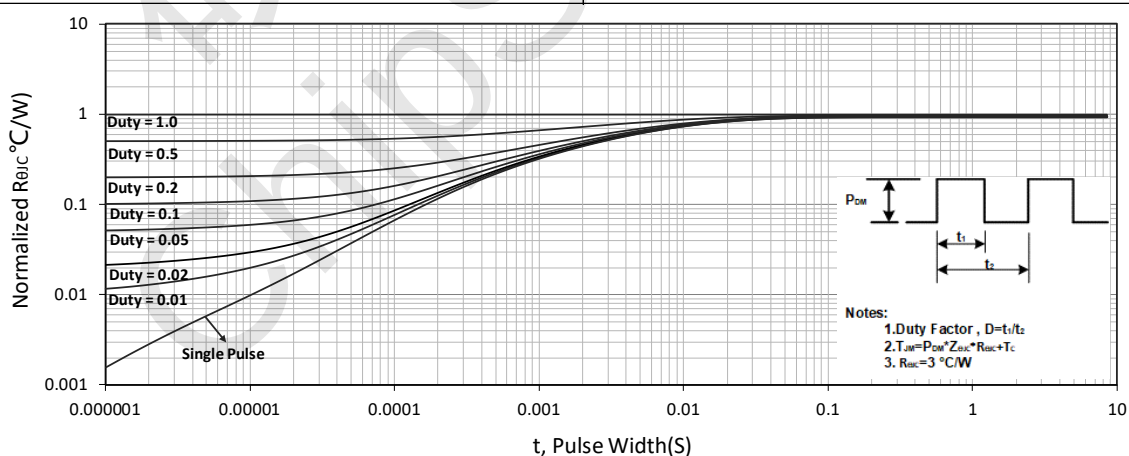
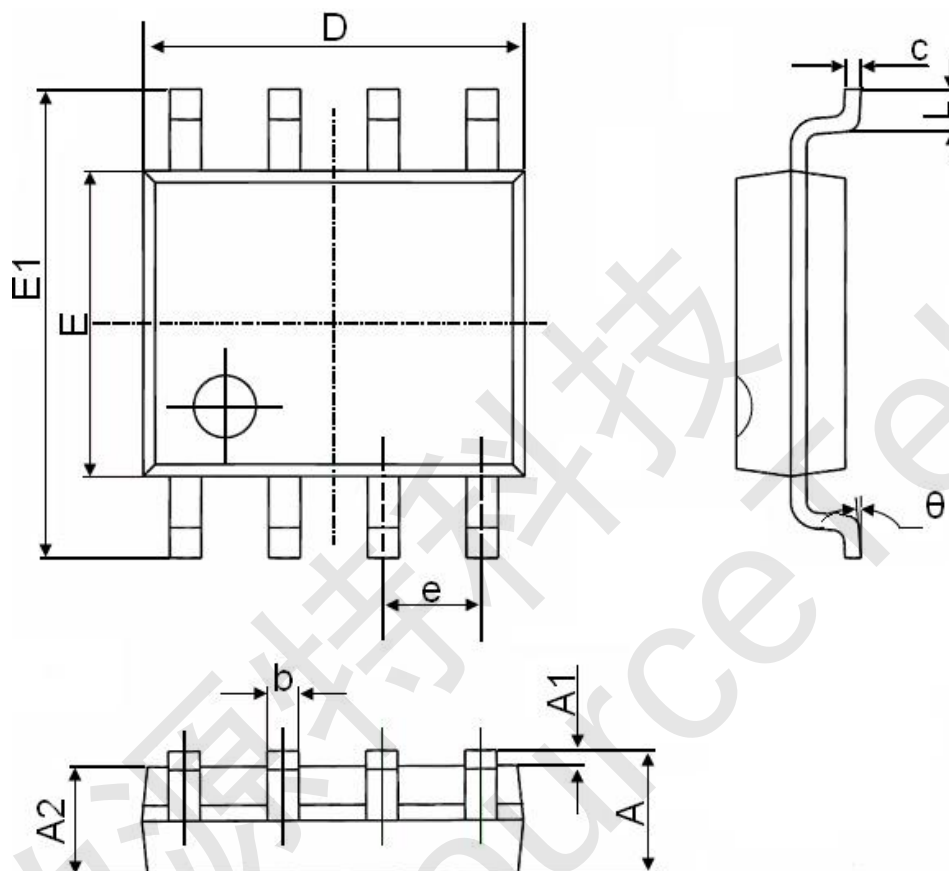


Figure 11. Normalized Maximum Transient Thermal Impedance



CST4892 SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	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	0.006	0.010
D	4.700	5.100	0.185	0.200
E	3.800	4.000	0.150	0.157
E1	5.800	6.200	0.228	0.244
e	1.270(BSC)		0.050(BSC)	
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°