



### CST4803A Dual P-Ch 30V Fast Switching MOSFETs



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

#### CST4803A Product Summary

BVDSS	RDSON	ID
-30V	35mΩ	-5.3A

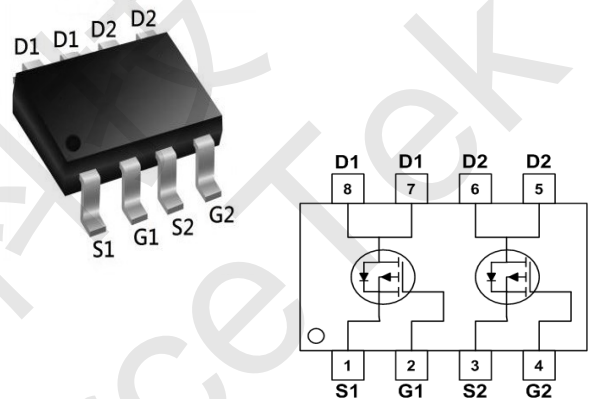
#### CST4803A Description

The CST4803A is the high cell density trenched P-ch MOSFETs, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications.

The CST4803A meet the RoHS and Green

Product requirement 100% EAS guaranteed with full function reliability approved.

#### CST4803A SOP8 Pin Configuration



#### CST4803A Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	-30	V
$V_{GS}$	Gate-Source Voltage	$\pm 20$	V
$I_{D@T_A=25^\circ C}$	Continuous Drain Current, $V_{GS} @ 10V^1$	-5.3	A
$I_{D@T_A=70^\circ C}$	Continuous Drain Current, $V_{GS} @ 10V^1$	-4.3	A
$I_{DM}$	Pulsed Drain Current <sup>2</sup>	-20	A
EAS	Single Pulse Avalanche Energy <sup>3</sup>	---	mJ
$I_{AS}$	Avalanche Current	---	A
$P_D@T_A=25^\circ C$	Total Power Dissipation <sup>4</sup>	2.0	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ C$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ C$

#### CST4803A Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient <sup>1</sup>	---	100	$^\circ C/W$
$R_{\theta JC}$	Thermal Resistance Junction-Case <sup>1</sup>	---	---	$^\circ C/W$



### CST4803A Dual P-Ch 30V Fast Switching MOSFETs

#### CST4803A Electrical Characteristics (T<sub>J</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	<b>BV<sub>DSS</sub></b>	V <sub>GS</sub> = 0V, I <sub>D</sub> = -250μA	-30	-	-	V
Gate-body Leakage current	<b>I<sub>GSS</sub></b>	V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±20V	-	-	±100	nA
Zero Gate Voltage Drain Current	<b>I<sub>DSS</sub></b>	V <sub>DS</sub> = -30V, V <sub>GS</sub> = 0V	-	-	-1	μA
Gate-Threshold Voltage	<b>V<sub>GS(th)</sub></b>	V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = -250μA	-1.0	-1.5	-2.1	V
Drain-Source On-Resistance <sup>3</sup>	<b>R<sub>DS(on)</sub></b>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.1A	-	35	55	mΩ
		V <sub>GS</sub> = -4.5V, I <sub>D</sub> = -3A	-	52	85	
<b>Dynamic Characteristics<sup>4</sup></b>						
Input Capacitance	<b>C<sub>iss</sub></b>	V <sub>DS</sub> = -15V, V <sub>GS</sub> = 0V, f = 1MHz	-	530	-	pF
Output Capacitance	<b>C<sub>oss</sub></b>		-	70	-	
Reverse Transfer Capacitance	<b>C<sub>rss</sub></b>		-	56	-	
<b>Switching Characteristics<sup>4</sup></b>						
Total Gate Charge	<b>Q<sub>g</sub></b>	V <sub>GS</sub> = -10V, I <sub>D</sub> = -4.1A, V <sub>DS</sub> = -15V	-	10	-	nC
Gate-Source Charge	<b>Q<sub>gs</sub></b>		-	2	-	
Gate-Drain Charge	<b>Q<sub>gd</sub></b>		-	2.8	-	
Turn-On Delay Time	<b>t<sub>d(on)</sub></b>	V <sub>GS</sub> = -10V, V <sub>DD</sub> = -15V, , R <sub>GEN</sub> = 6Ω, I <sub>D</sub> = -4.1A,	-	6.9	-	ns
Rise Time	<b>t<sub>r</sub></b>		-	12	-	
Turn-Off Delay Time	<b>t<sub>d(off)</sub></b>		-	19	-	
Fall Time	<b>t<sub>f</sub></b>		-	7.5	-	
<b>Source-Drain Body Diode Characteristics</b>						
Diode Forward Voltage <sup>3</sup>	<b>V<sub>SD</sub></b>	I <sub>S</sub> = -1.7A, V <sub>GS</sub> = 0V	-	-	-1.2	V
Continuous Source Current	<b>I<sub>S</sub></b>		-	-	-5.3	A

#### Notes:

1. Repetitive rating, pulse width limited by junction temperature T<sub>J(MAX)</sub>=150°C.
2. The data tested by surface mounted on a 1 inch2 FR-4 board with 20Z copper, The value in any given application depends on the user's specific board design.
3. Pulse Test: Pulse width≤300μs, duty cycle≤2%.
4. This value is guaranteed by design hence it is not included in the production test.



#### CST4803A Typical Characteristics

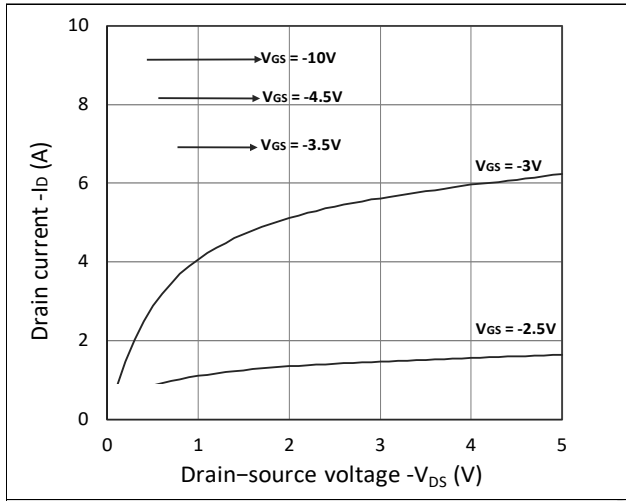


Figure 1. Output Characteristics

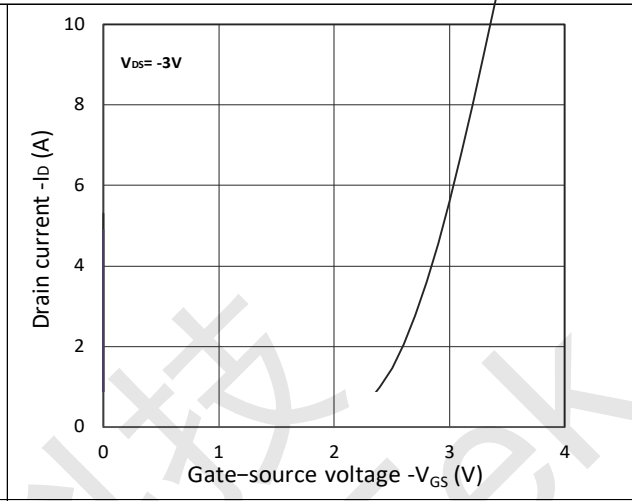


Figure 2. Transfer Characteristics

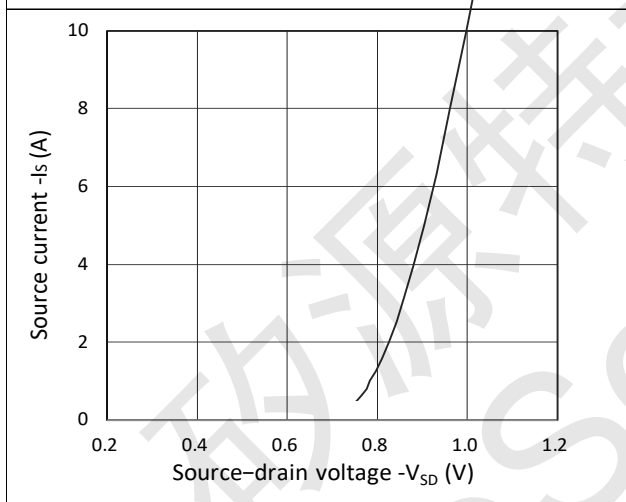


Figure 3. Forward Characteristics of Reverse

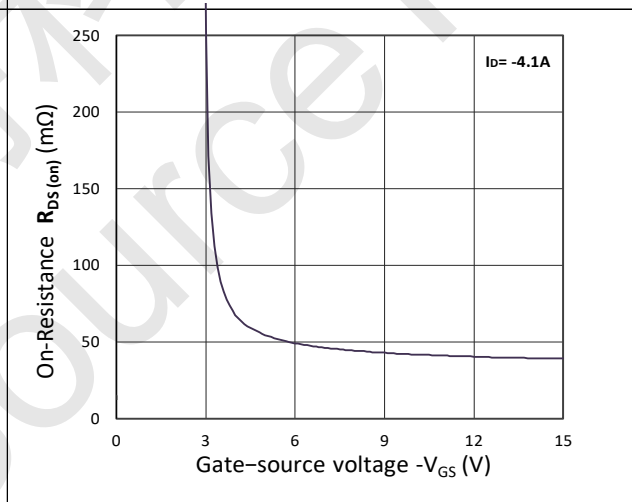


Figure 4.  $R_{DS(on)}$  vs.  $V_{GS}$

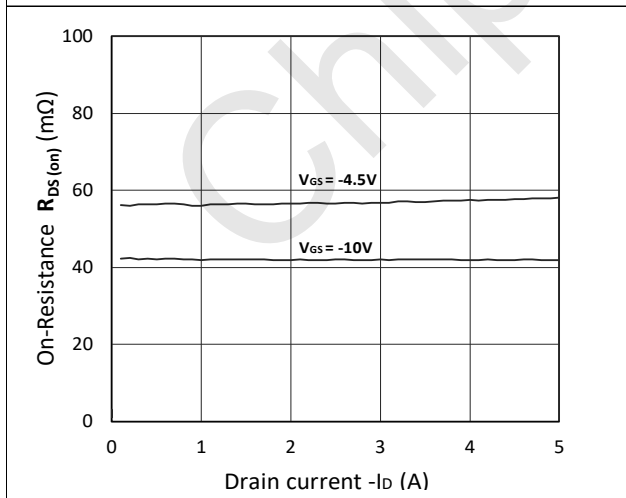


Figure 5.  $R_{DS(on)}$  vs.  $I_D$

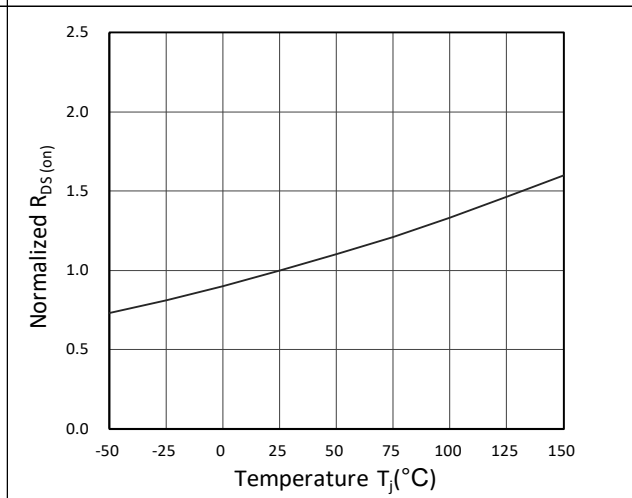


Figure 6. Normalized  $R_{DS(on)}$  vs. Temperature

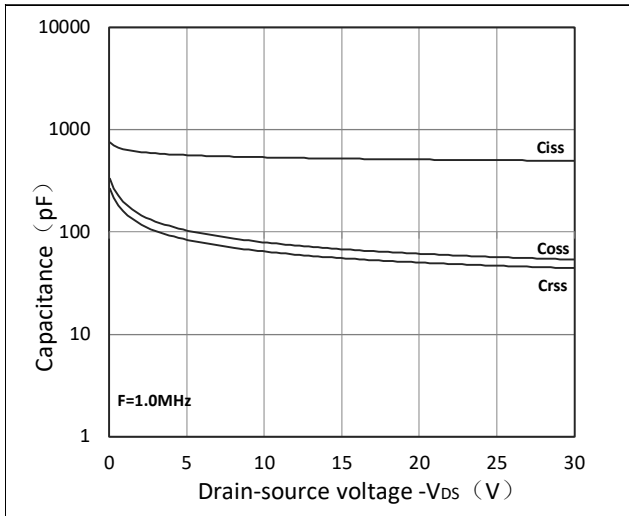


Figure 7. Capacitance Characteristics

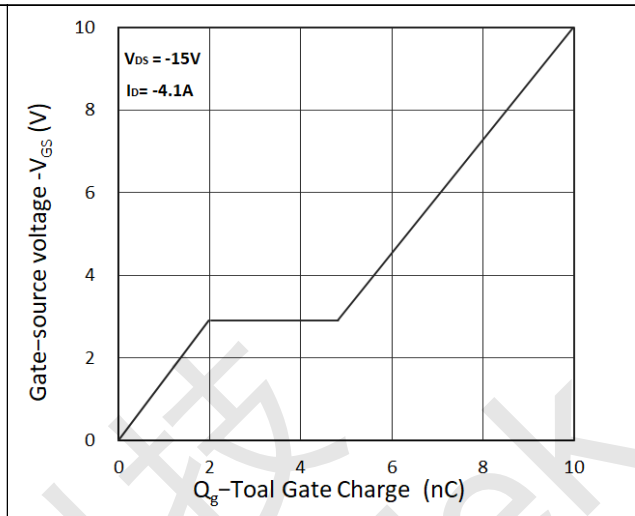


Figure 8. Gate Charge Characteristics



CST4803A Package Mechanical Data- SOP-8

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
$\theta$	0°	8°	0°	8°