



CST110P03F P-Ch 30V Fast Switching MOSFETs

- ★ Super Low Gate Charge
- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

CST110P03F Product Summary



BVDSS	RDSON	ID
-30V	2.5mΩ	-110A

CST110P03F PDFN5060-8L Pin Configuration



CST110P03F Description

The CST110P03F is the highest performance trench P-ch MOSFETs with extreme high cell density, which provide excellent RDSON and gate charge for most of the synchronous buck converter applications .

The CST110P03F meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

CST110P03F Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D@T_C=25^{\circ}C$	Continuous Drain Current, $V_{GS} @ -10V^{1,6}$	-110	A
$I_D@T_C=100^{\circ}C$	Continuous Drain Current, $V_{GS} @ -10V^{1,6}$	-70	A
I_{DM}	Pulsed Drain Current ²	-450	A
EAS	Single Pulse Avalanche Energy ³	576	mJ
I_{AS}	Avalanche Current	-70	A
$P_D@T_C=25^{\circ}C$	Total Power Dissipation ⁴	6.0	W
T_{STG}	Storage Temperature Range	-55 to 175	°C
T_J	Operating Junction Temperature Range	-55 to 175	°C

CST110P03F Thermal Data

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-ambient ¹ ($t \leq 10S$)	---	20	°C/W
	Thermal Resistance Junction-ambient ¹ (Steady State)	---	50	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-case ¹	---	3.6	°C/W



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Table 3. Electrical Characteristics (T_J=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
On/Off States						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V I _D =-250μA	-30			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-30V, V _{GS} =0V			-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V			±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1	-1.7	-2.5	V
g _{FS}	Forward Transconductance	V _{DS} =-5V, I _D =-20A		65		S
R _{DS(ON)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-20A		2.5	3.1	mΩ
		V _{GS} =-4.5V, I _D =-20A		4	5.2	mΩ
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =-15V, V _{GS} =0V, f=1.0MHz		7000		pF
C _{oss}	Output Capacitance			820		pF
C _{rss}	Reverse Transfer Capacitance			540		pF
R _g	Gate resistance	V _{GS} =0V, V _{DS} =0V, f=1.0MHz		2.2		Ω
Switching Parameters						
t _{d(on)}	Turn-on Delay Time	V _{GS} =-10V, V _{DS} =-15V, R _L =0.75Ω, R _{GEN} =3Ω		14		nS
t _r	Turn-on Rise Time			13		nS
t _{d(off)}	Turn-Off Delay Time			65		nS
t _f	Turn-Off Fall Time			37		nS
Q _g	Total Gate Charge	V _{GS} =-10V, V _{DS} =-15V, I _D =-20A		130		nC
Q _{gs}	Gate-Source Charge			12		nC
Q _{gd}	Gate-Drain Charge			31		nC
Source-Drain Diode Characteristics						
I _{SD}	Source-Drain Current (Body Diode)				-108	A
V _{SD}	Forward on Voltage ^(Note 3)	V _{GS} =0V, I _S =-20A			-1.2	V
t _{rr}	Reverse Recovery Time	I _F =-20A, di/dt=100A/μs		30		ns
Q _{rr}	Reverse Recovery Charge	I _F =-20A, di/dt=100A/μs		40		nC

Notes 1.Repetitive Rating: Pulse width limited by maximum junction temperature.

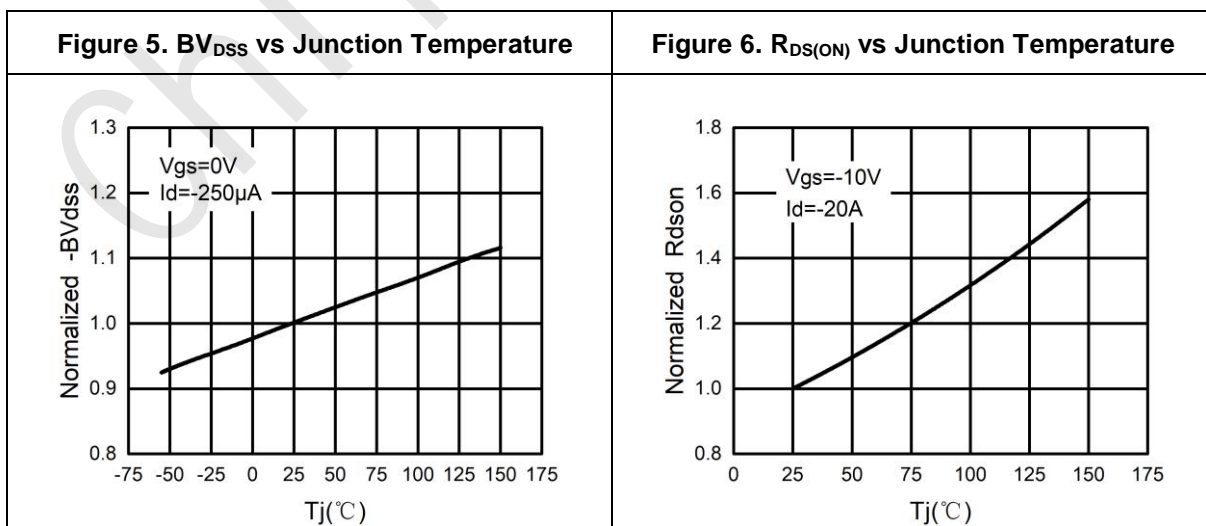
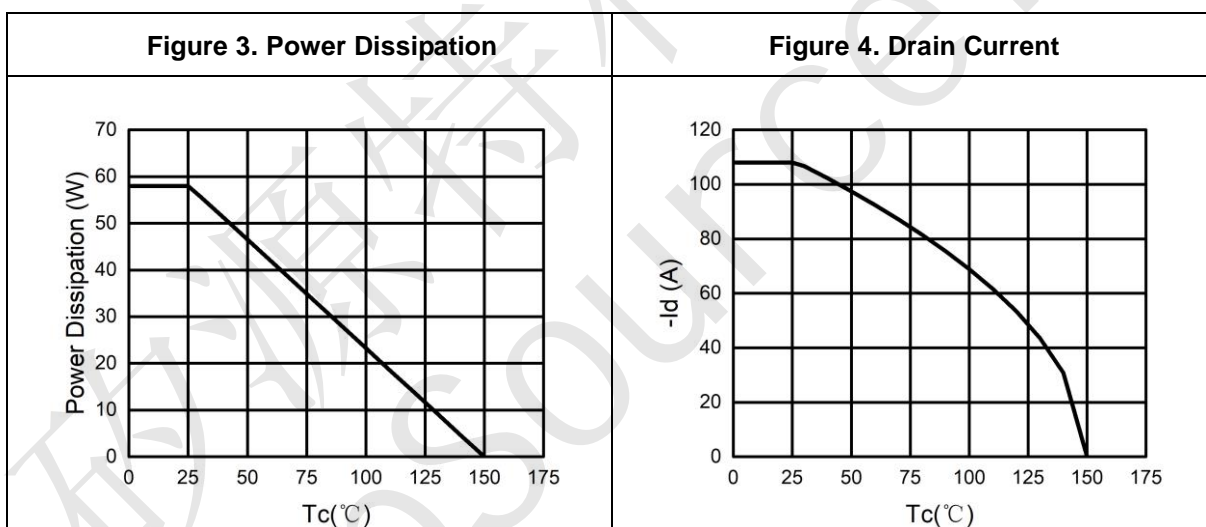
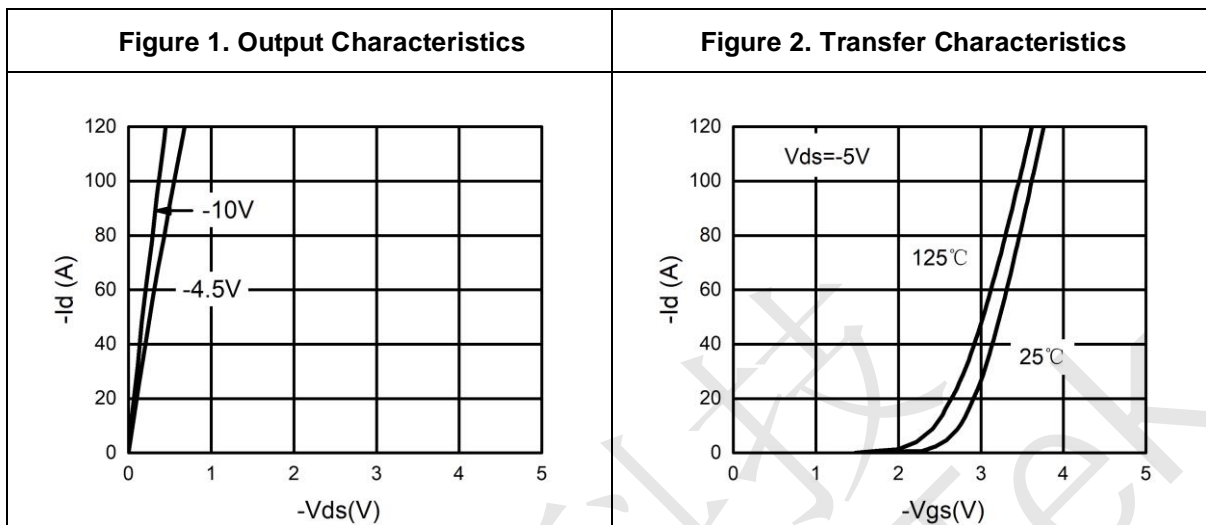
Notes 2.E_{AS} condition: T_J=25°C, V_{DD}=15V, V_G=-10V, R_g=25Ω, L=0.5mH.

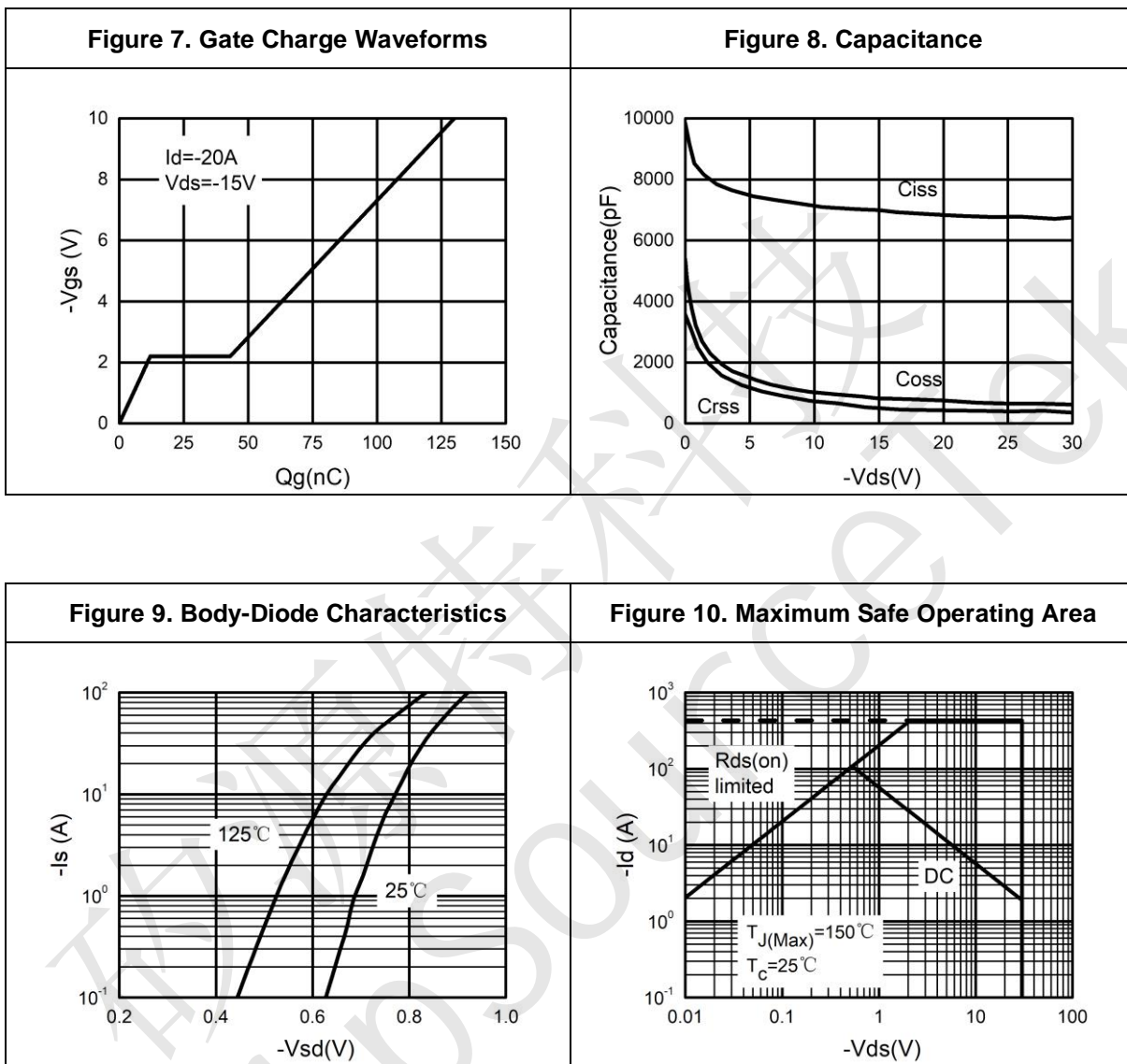
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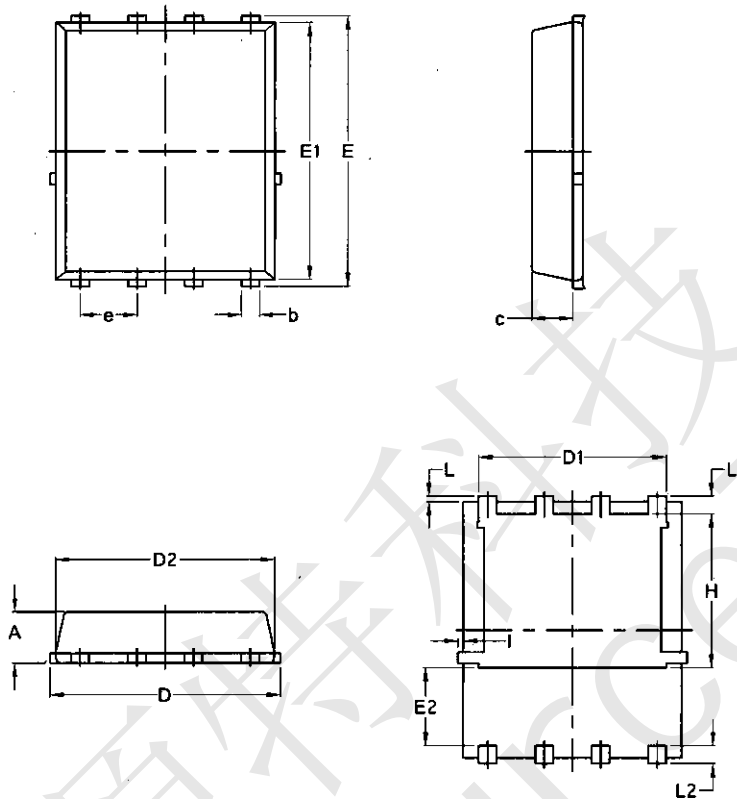
CST110P03F Typical Electrical And Thermal Characteristics (Curves)







CST110P03F Package Mechanical Data-PDFN5060-8L-Single



Symbol	Common			
	mm		Inch	
	Min	Max	Min	Max
A	1.03	1.17	0.0406	0.0461
b	0.34	0.48	0.0134	0.0189
c	0.824	0.0970	0.0324	0.082
D	4.80	5.40	0.1890	0.2126
D1	4.11	4.31	0.1618	0.1697
D2	4.80	5.00	0.1890	0.1969
E	5.95	6.15	0.2343	0.2421
E1	5.65	5.85	0.2224	0.2303
E2	1.60	/	0.0630	/
e	1.27 BSC		0.05 BSC	
L	0.05	0.25	0.0020	0.0098
L1	0.38	0.50	0.0150	0.0197
L2	0.38	0.50	0.0150	0.0197
H	3.30	3.50	0.1299	0.1378
I	/	0.18	/	0.0070