

RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

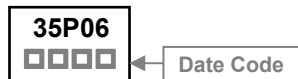
The SSD35P06-C is the highest performance trench P-Ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSD35P06-C meet the RoHS and Green Product requirement with full function reliability approved.

FEATURES

- Advanced High Cell Density Trench Technology
- Super Low Gate Charge
- Green Device Available

MARKING



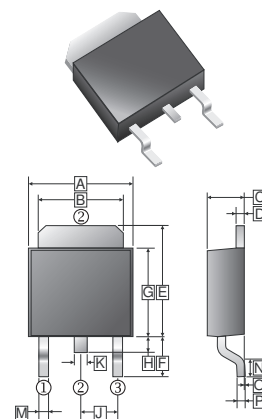
PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13 inch

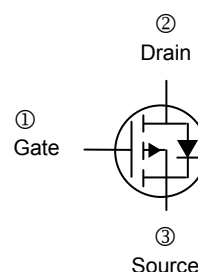
ORDER INFORMATION

Part Number	Type
SSD35P06-C	Lead (Pb)-free and Halogen-free

TO-252(D-Pack)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.3	6.9	J	2.3 REF.	
B	4.95	5.53	K	0.89 REF.	
C	2.1	2.5	M	0.45	1.14
D	0.4	0.9	N	1.55 Typ.	
E	6	7.7	O	0	0.15
F	2.90 REF		P	0.58 REF.	
G	5.4	6.4			
H	0.6	1.2			



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current, @ $V_{GS} = -10V$ ¹	I_D	-35	A
$T_C = 25^\circ C$		-27	
$T_C = 100^\circ C$			
Pulsed Drain Current ³	I_{DM}	-70	A
Total Power Dissipation	P_D	50	W
$T_C = 25^\circ C$			
Junction and Storage Temperature Range	T_J, T_{STG}	-55~150	$^\circ C$
Thermal Date			
Maximum Thermal Resistance from Junction-Case ¹	$R_{\theta JC}$	2.5	$^\circ C/W$
Maximum Thermal Resistance from Junction-Ambient ¹	$R_{\theta JA}$	62.5	$^\circ C/W$
Maximum Thermal Resistance from Junction-Ambient ²	$R_{\theta JA}$	110	$^\circ C/W$

ELECTRICAL CHARACTERISTICS ($T_J=25^\circ C$ unless otherwise specified)

ELECTRICAL CHARACTERISTICS (T _J =25°C unless otherwise specified)							
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		BV _{DSS}	-60	-	-	V	V _{GS} =0, I _D = -250μA
Gate-Threshold Voltage		V _{GS(th)}	-1	-	-2.5	V	V _{DS} =V _{GS} , I _D = -250μA
Forward Transconductance		g _{fs}	-	23	-	S	V _{DS} = -10V, I _D = -18A
Gate-Source Leakage Current		I _{GSS}	-	-	±100	nA	V _{GS} = ±20V
Gate-Source Leakage Current	T _J =25°C	I _{DSS}	-	-	-1	μA	V _{DS} = -48V, V _{GS} =0
	T _J =55°C		-	-	-5		V _{DS} = -48V, V _{GS} =0
Drain-Source On-Resistance ⁴		R _{DS(ON)}	-	-	25	mΩ	V _{GS} = -10V, I _D = -18A
			-	-	35		V _{GS} = -4.5V, I _D = -12A
Total Gate Charge		Q _g	-	25	-	nC	I _D = -12A V _{DS} = -20V V _{GS} = -4.5V
Gate-Source Charge		Q _{gs}	-	6.7	-		
Gate-Drain Charge		Q _{gd}	-	5.5	-		
Turn-on Delay Time		T _{d(on)}	-	38	-	nS	V _{DD} = -15V I _D = -1A V _{GS} = -10V R _G =3.3Ω
Rise Time		T _r	-	23.6	-		
Turn-off Delay Time		T _{d(off)}	-	100	-		
Fall Time		T _f	-	6.8	-		
Input Capacitance		C _{iss}	-	3635	-	pF	V _{GS} =0 V _{DS} = -15V f=1MHz
Output Capacitance		C _{oss}	-	224	-		
Reverse Transfer Capacitance		C _{rss}	-	141	-		
Source-Drain Diode							
Continuous Source Current ¹		I _S	-	-	-35	A	
Pulsed Source Current ³		I _{SM}	-	-	-70	A	
Diode Forward Voltage ⁴		V _{SD}	-	-	-1.2	V	I _S = -1A, V _{GS} =0
Reverse Recovery Time		t _{rr}	-	18	-	nS	I _F = -12A, dI/dt=100A/μs T _J =25°C
Reverse Recovery Charge		Q _{rr}	-	14.3	-	nC	

Notes:

1. Surface mounted on a 1 inch² FR-4 board with 20Z copper.
2. When mounted on Min. Copper pad.
3. Pulse width limited by maximum junction temperature, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
4. The data tested by pulsed, pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

CHARACTERISTIC CURVE

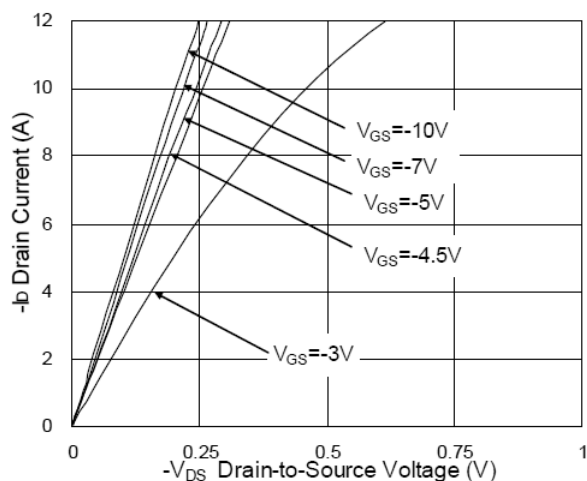


Fig.1 Typical Output Characteristics

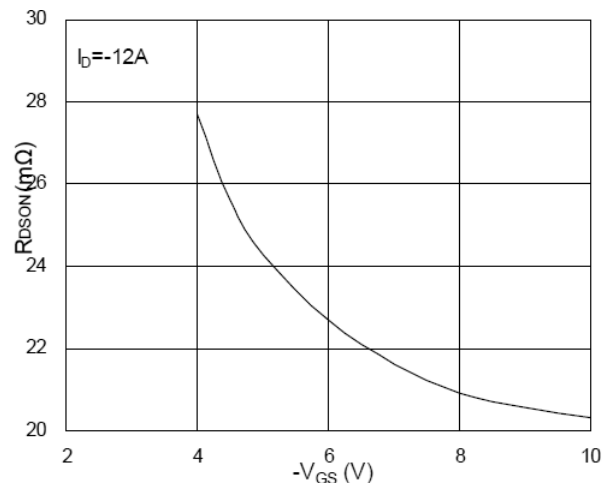


Fig.2 On-Resistance v.s Gate-Source

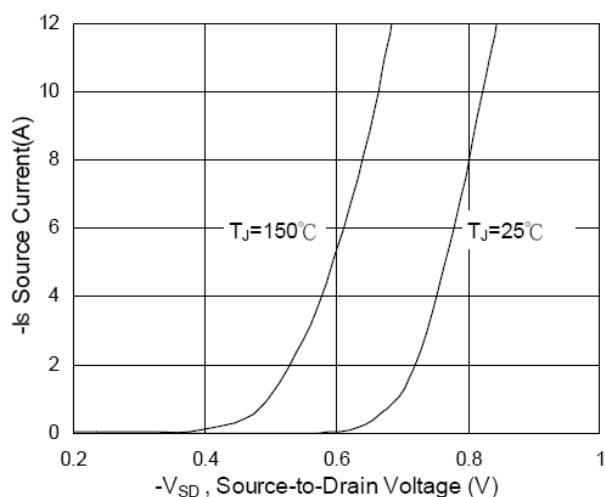


Fig.3 Forward Characteristics Of Reverse

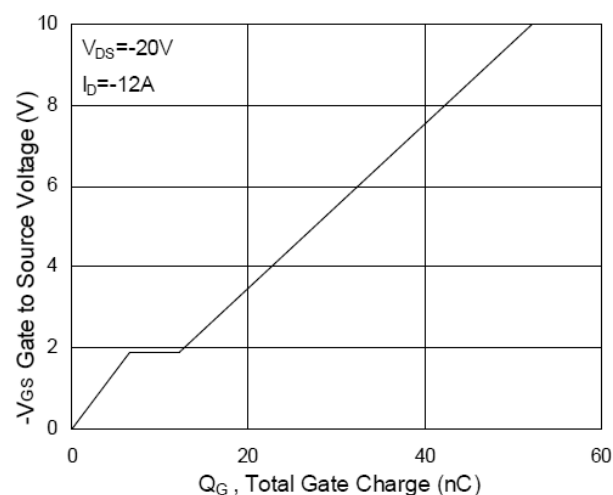


Fig.4 Gate-Charge Characteristics

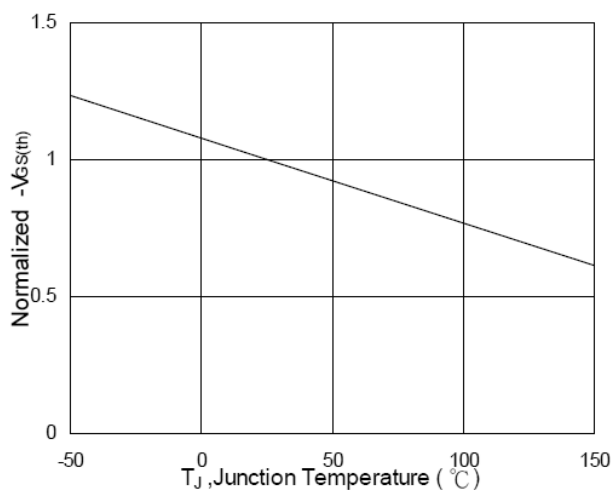


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

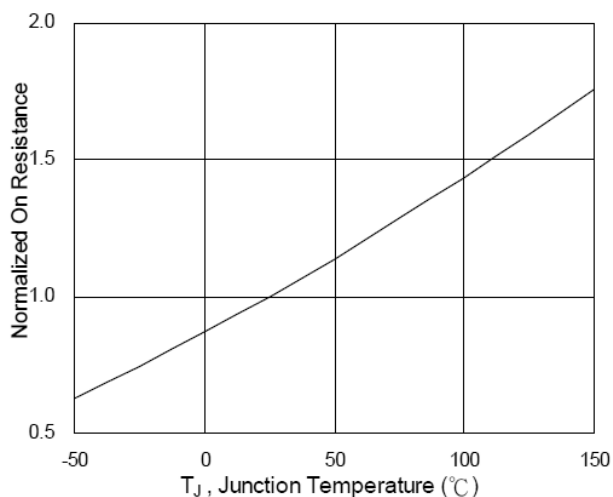


Fig.6 Normalized $R_{DS(on)}$ v.s T_J

CHARACTERISTIC CURVE

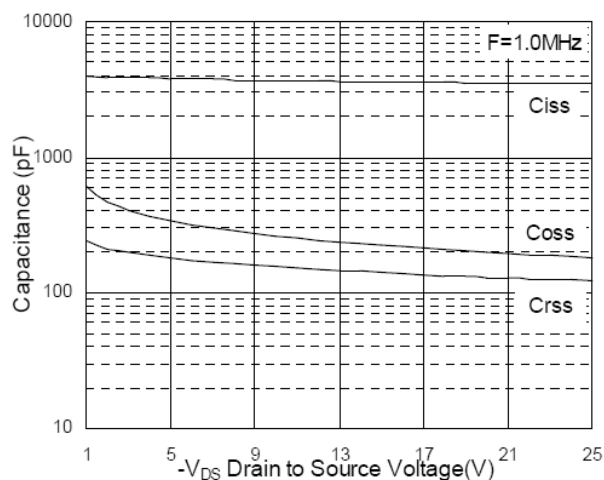


Fig.7 Capacitance

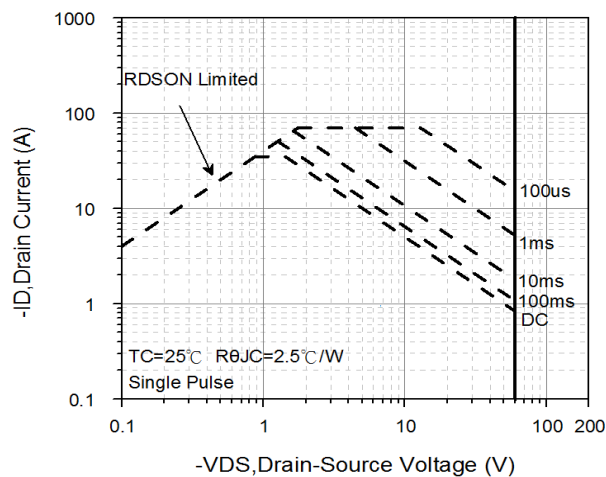


Fig.8 Safe Operating Area

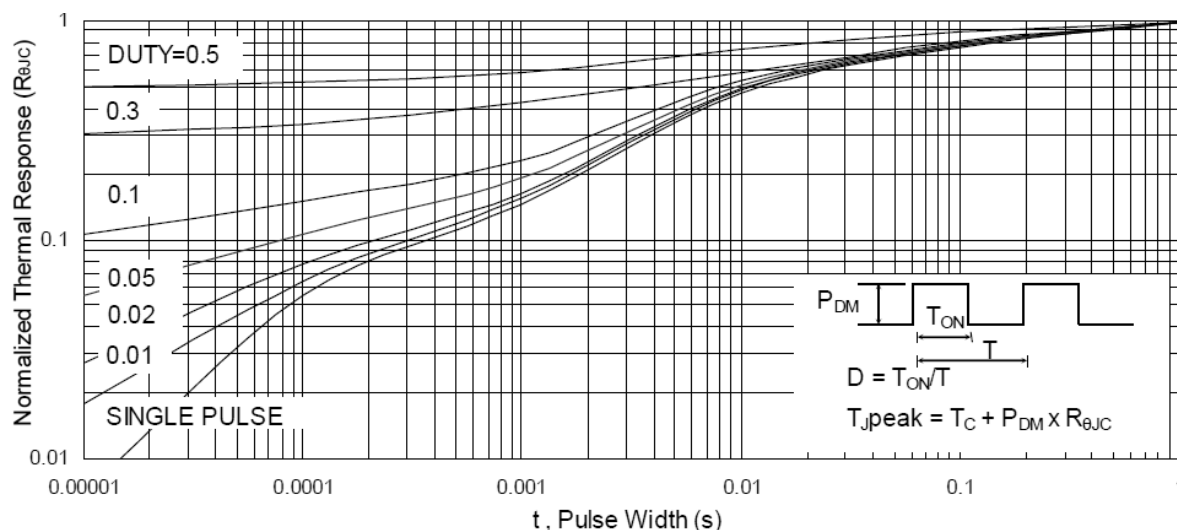


Fig.9 Normalized Maximum Transient Thermal Impedance

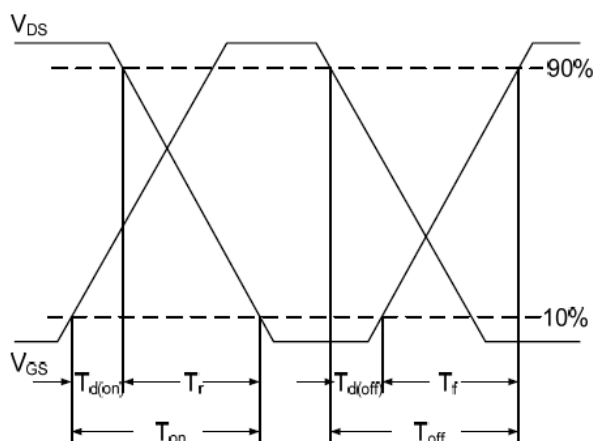


Fig.10 Switching Time Waveform

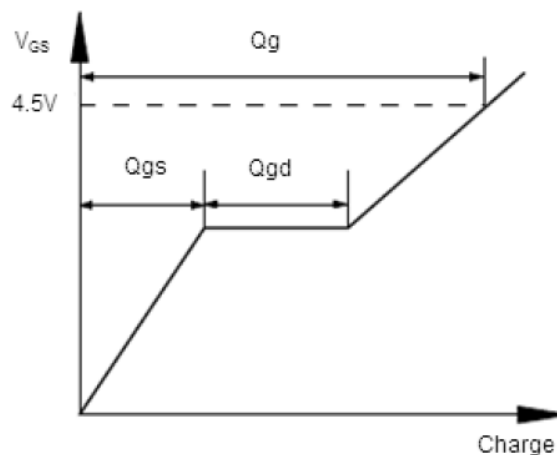


Fig.11 Gate Charge Waveform