

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

DESCRIPTION

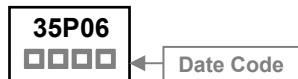
The SSD35P06-C is the highest performance trench P-Ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

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



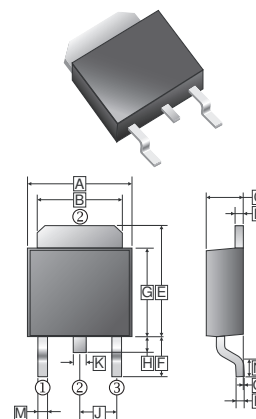
PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13 inch

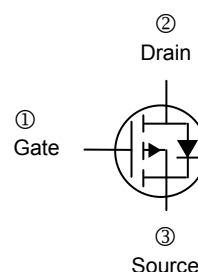
ORDER INFORMATION

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	$T_C = 25^\circ C$	-35
		$T_C = 100^\circ C$	-27
Pulsed Drain Current ³	I_{DM}	-70	A
Total Power Dissipation	P_D	50	W
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)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-60	-	-	V	$V_{GS}=0, I_D = -250\mu A$
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-2.5	V	$V_{DS}=V_{GS}, I_D = -250\mu A$
Forward Transconductance	g_{fs}	-	23	-	S	$V_{DS} = -10V, I_D = -18A$
Gate-Source Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{GS} = \pm 20V$
Gate-Source Leakage Current	I_{DSS}	-	-	-1	μA	$V_{DS} = -48V, V_{GS} = 0$
						$V_{DS} = -48V, V_{GS} = 0$
Drain-Source On-Resistance ⁴	$R_{DS(ON)}$	-	-	25	m Ω	$V_{GS} = -10V, I_D = -18A$
				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	$V_{DD} = -15V$ $I_D = -1A$ $V_{GS} = -10V$ $R_G = 3.3\Omega$
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	$I_F = -12A, dI/dt = 100A/\mu s$
Reverse Recovery Charge	Q_{rr}	-	14.3	-	nC	$T_J = 25^\circ C$

Notes:

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

CHARACTERISTIC CURVE

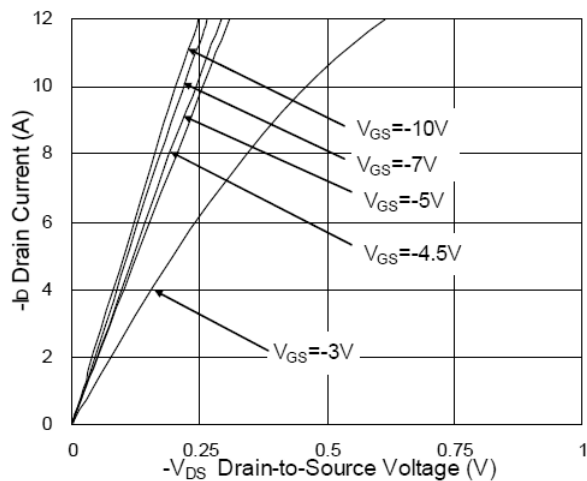


Fig.1 Typical Output Characteristics

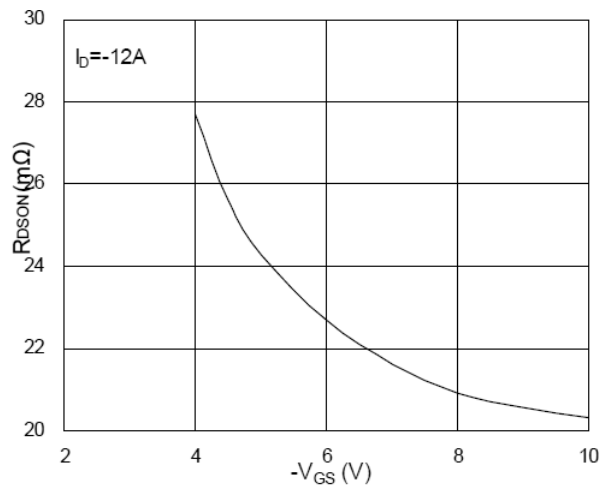


Fig.2 On-Resistance v.s Gate-Source

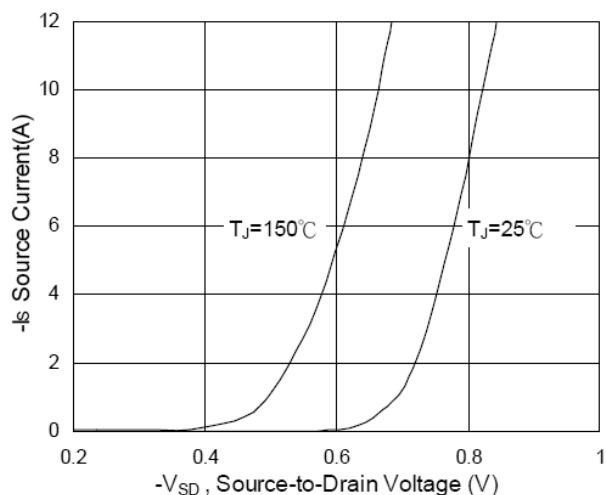


Fig.3 Forward Characteristics Of Reverse

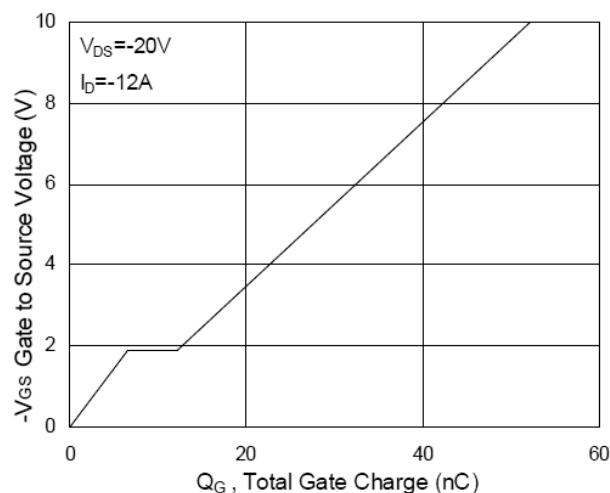


Fig.4 Gate-Charge Characteristics

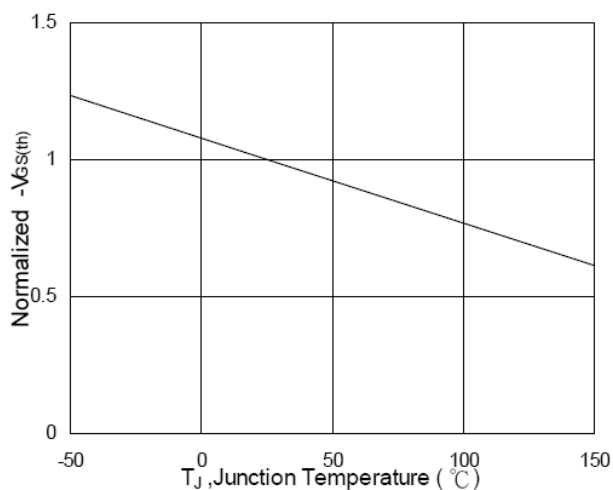


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

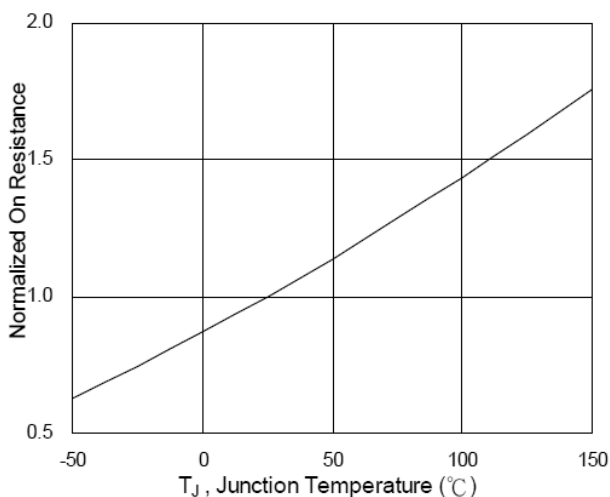


Fig.6 Normalized $R_{DS(ON)}$ v.s T_J

CHARACTERISTIC CURVE

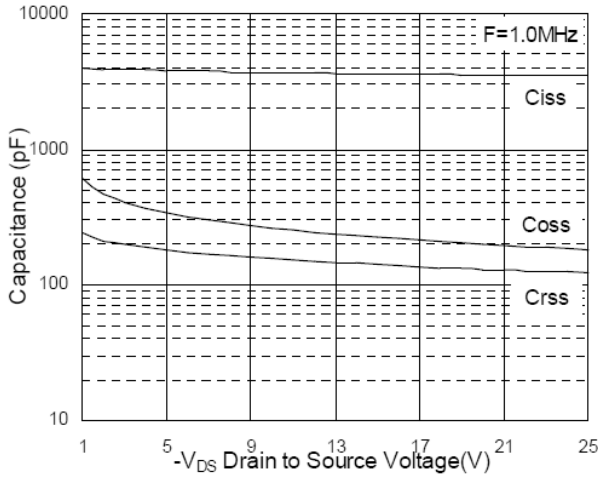


Fig.7 Capacitance

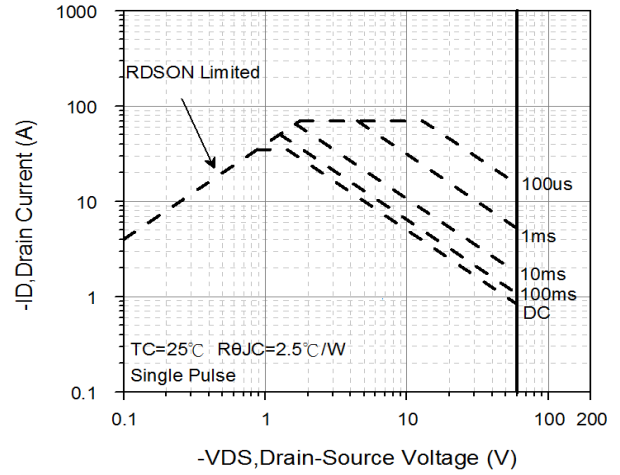


Fig.8 Safe Operating Area

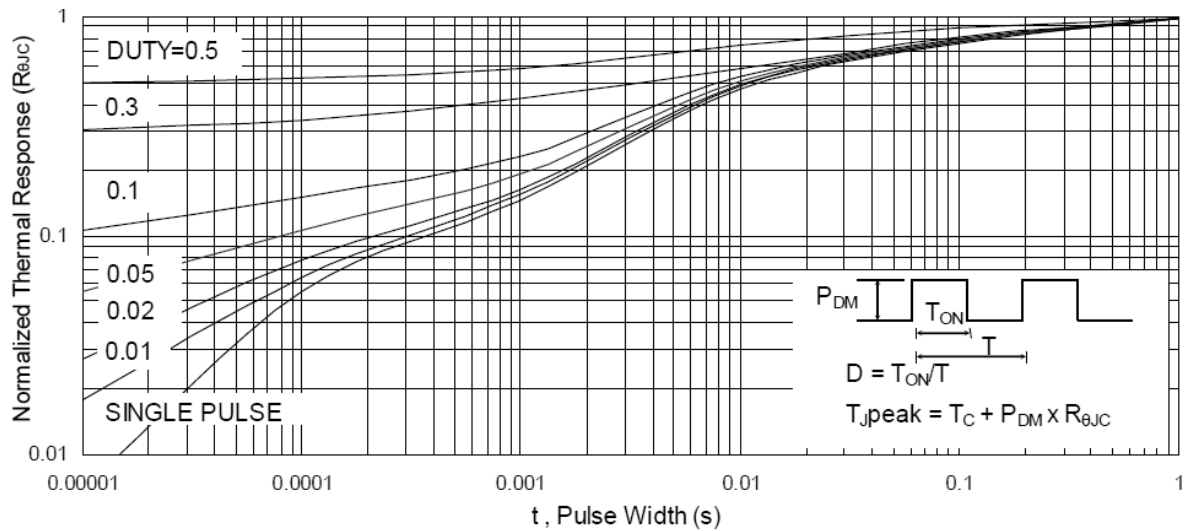


Fig.9 Normalized Maximum Transient Thermal Impedance

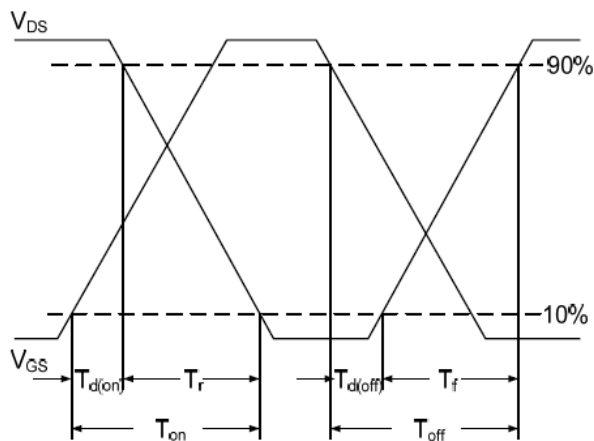


Fig.10 Switching Time Waveform

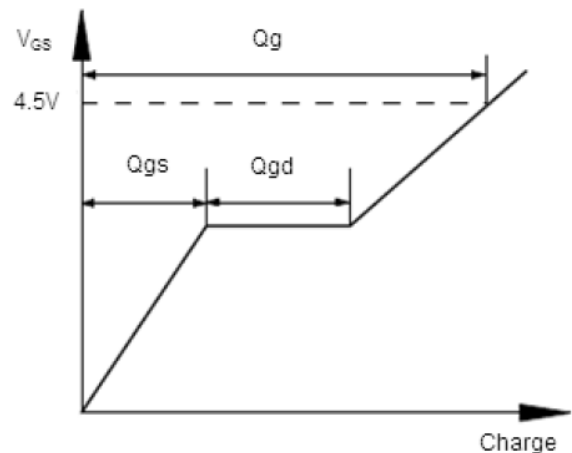


Fig.11 Gate Charge Waveform