

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

DESCRIPTION

The SSG07P06 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 SSG07P06 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

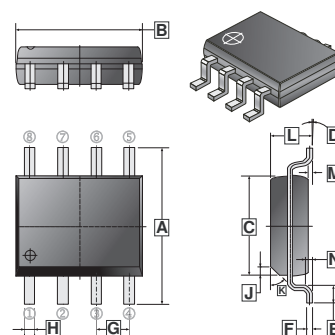
MARKING



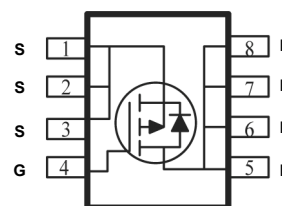
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	2.5K	13' inch

SOP-8



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.33	0.51
B	4.70	5.10	J	0.375	REF.
C	3.80	4.00	K	45°	REF.
D	0°	8°	L	1.35	1.75
E	0.40	1.27	M	0.10	0.25
F	0.10	0.25	N	0.25	REF.
G	1.27	TYP.			



MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit	
Drain-Source Voltage	V_{DS}	-60	V	
Gate-Source Voltage	V_{GS}	± 20	V	
Continuous Drain Current @ $V_{GS}=10\text{V}$ ¹	I_D	$T_A=25^\circ\text{C}$	-7	A
		$T_A=70^\circ\text{C}$	-5.6	A
Pulsed Drain Current ²	I_{DM}	-28	A	
Total Power Dissipation	P_D	3.1	W	
Operating Junction & Storage Temperature Range	T_J, T_{STG}	-55 ~ 150	$^\circ\text{C}$	
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient ¹	$R_{\theta JA}$	$t \leq 10\text{sec}, 40$	$^\circ\text{C} / \text{W}$	
		Steady State, 105		
Thermal Resistance Junction-Ambient		125		
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	30		

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

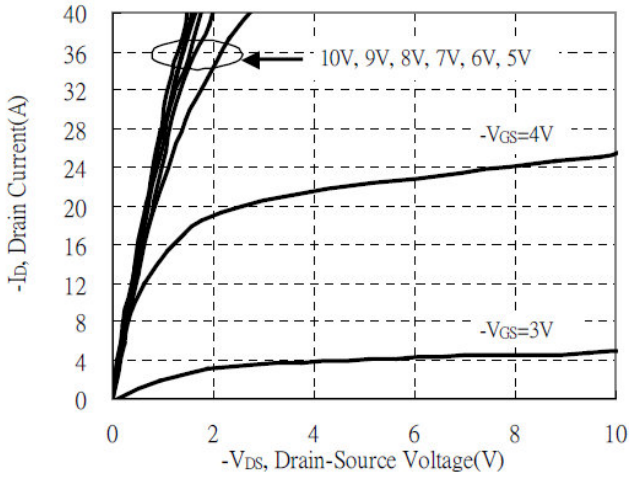
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-60	-	-	V	$V_{GS}=0V, I_D = -250\mu A$
Gate Threshold Voltage	$V_{GS(th)}$	-1	-	-2.5	V	$V_{DS}=V_{GS}, I_D = -250\mu A$
Forward Transfer conductance	g_{fs}	-	13	-	S	$V_{DS} = -5V, I_D = -7A$
Gate-Body Leakage	I_{GSS}	-	-	± 100	nA	$V_{DS}=0V, V_{GS} = \pm 20V$
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	$V_{DS} = -48V, V_{GS}=0V, T_J=25^\circ C$
		-	-	-25	μA	$V_{DS} = -48V, V_{GS}=0V, T_J=125^\circ C$
Drain-Source On-Resistance ³	$R_{DS(ON)}$	-	33	40	m Ω	$V_{GS} = -10V, I_D = -7A$
		-	45	50		$V_{GS} = -4.5V, I_D = -5A$
Total Gate Charge	Q_g	-	38.7	-	nC	$I_D = -6.2A$ $V_{DS} = -30V$ $V_{GS} = -10V$
Gate-Source Charge	Q_{gs}	-	8.6	-		
Gate-Drain ("Miller") Charge	Q_{gd}	-	9	-		
Turn-On Delay Time	$T_{d(on)}$	-	9.7	-	nS	$V_{DD} = -30V$ $I_D = -6.2A$ $V_{GS} = -10V$ $R_G = 3\Omega$ $R_L = 4.8\Omega$
Rise Time	T_r	-	6.2	-		
Turn-Off Delay Time	$T_{d(off)}$	-	34	-		
Fall Time	T_f	-	14.3	-		
Input Capacitance	C_{iss}	-	1910	-	pF	$V_{DS} = -30V$ $V_{GS} = 0$ $f = 1MHz$
Output Capacitance	C_{oss}	-	98.1	-		
Reverse Transfer Capacitance	C_{rss}	-	62.5	-		
Source-Drain Diode						
Diode Forward Voltage ³	V_{SD}	-	-0.72	-1.2	V	$V_{GS}=0V, I_S = -1A$
Continuous Source Current ¹	I_S	-	-	-4.2	A	
Pulsed Source Current ²	I_{SM}	-	-	-16	A	
Reverse Recovery Time	t_{rr}	-	32	-	nS	$I_F = -6.2A, di/dt = 100A/\mu s, T_J = 25^\circ C$
Reverse Recovery Charge	Q_{rr}	-	44	-	nC	

Notes:

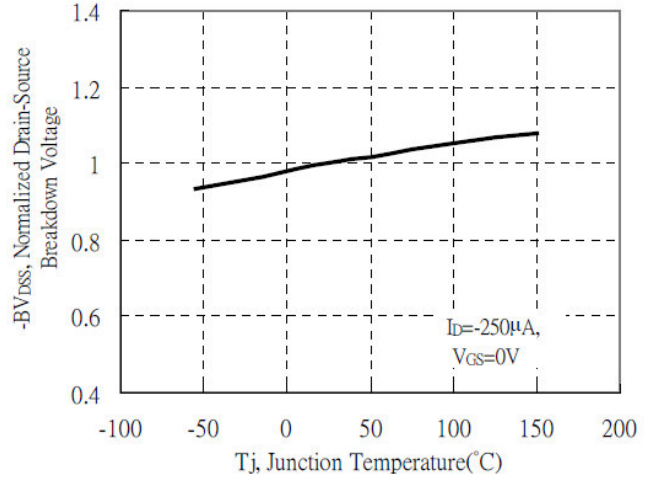
- Surface mounted on a 1 inch² FR-4 board with 20Z copper.
- The power dissipation is limited by 150°C junction temperature.
- The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

CHARACTERISTIC CURVES

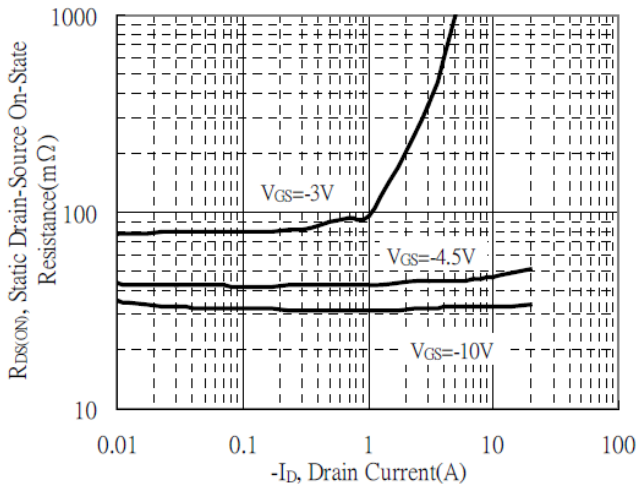
Typical Output Characteristics



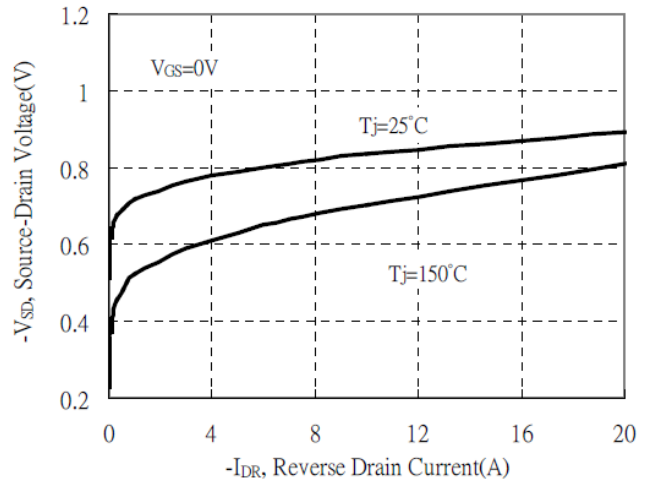
Brekdown Voltage vs Temperature



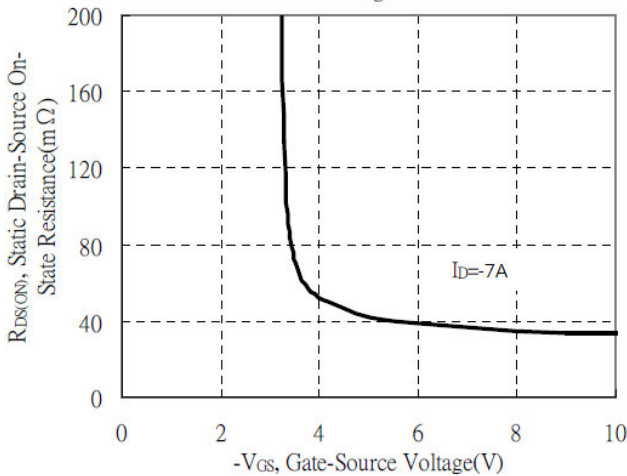
Static Drain-Source On-State resistance vs Drain Current



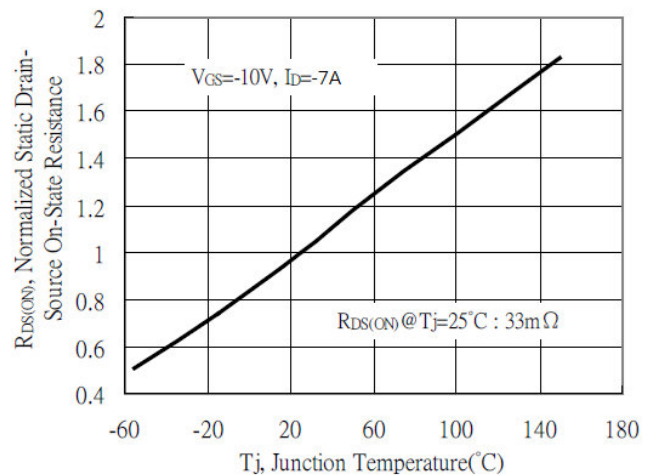
Reverse Drain Current vs Source-Drain Voltage



Static Drain-Source On-State Resistance vs Gate-Source Voltage

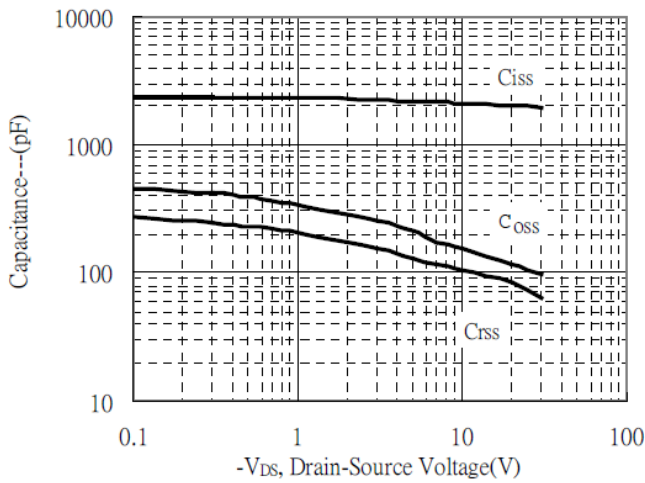


Drain-Source On-State Resistance vs Junction Temperature

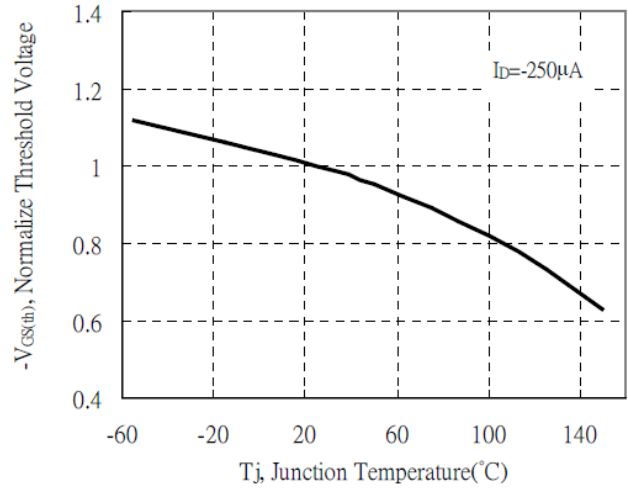


CHARACTERISTIC CURVES

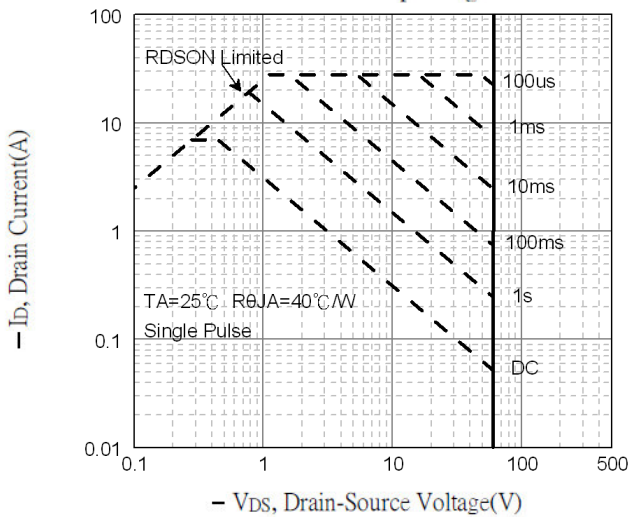
Capacitance vs Drain-to-Source Voltage



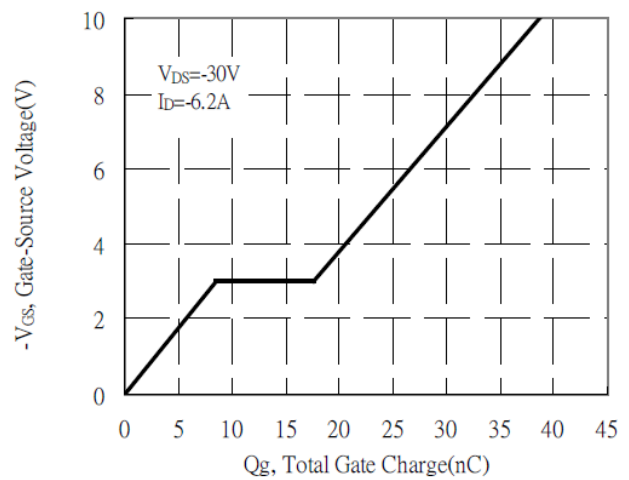
Threshold Voltage vs Junction Temperature



Maximum Safe Operating Area



Gate Charge Characteristics



Transient Thermal Response Curves

