Elektronische Bauelemente

SSD01N60-C

1.2A, 600V, $R_{DS(ON)}$ 8Ω

N-Ch Enhancement Mode Power MOSFET

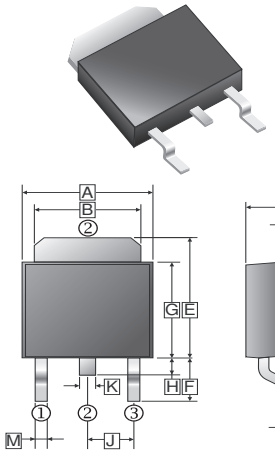
RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

The SSD01N60-C is an N-ch mode power MOSFET using advanced technology to provide customers with planar stripe. It will provide much high efficiency by using optimized charge coupling technology. These user friendly devices give an advantage of low EMI to designers as well as low switching loss, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSD01N60-C meet the RoHS and Green Product requirement with full function reliability approved.

TO-252(D-Pack)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.30	6.90	J	2.30 REF.	
B	4.95	5.53	K	0.89 REF.	
C	2.10	2.50	M	0.45	1.14
D	0.40	0.90	N	1.55 TYP.	
E	6.00	7.70	O	0	0.15
F	2.90 REF		P	0.58 REF.	
G	5.40	6.40			
H	0.60	1.20			

FEATURES

- Advanced Planar Technology
- High Switching Speed
- Green Device Available

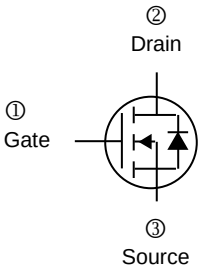
MARKING

PACKAGE INFORMATION

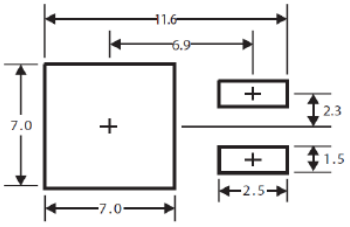
Package	MPQ	Leader Size
TO-252	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSD01N60-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	600	V
Gate-Source Voltage		V_{GS}	±30	V
Continuous Drain Current [1] @V_{GS}=10V	T_C=25℃	I_D	1.2	A
	T_C=100℃		0.8	
Pulsed Drain Current [3]		I_{DM}	5	A
Total Power Dissipation [1]	T_C=25℃	P_D	34.7	W
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	62.5	℃/W
Thermal Resistance Junction-Ambient [2]			110	
Thermal Resistance Junction-Case		$R_{\theta JC}$	3.6	

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	600	-	-	V	V_{GS}=0V, I_D=250μA
Gate-Threshold Voltage	$V_{GS(th)}$	2	-	4	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±30V
Drain-Source Leakage Current	I_{DSS}	-	-	1	uA	V_{DS}=480V, V_{GS}=0
Static Drain-Source On-Resistance [4]	$R_{DS(ON)}$	-	6.8	8	Ω	V_{GS}=10V, I_D=0.5A
Total Gate Charge	Q_g	-	7.5	-	nC	I_D=1A V_{DS}=480V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	2.3	-		
Gate-Drain Change	Q_{gd}	-	2.2	-		
Turn-on Delay Time	$T_{d(on)}$	-	3.9	-	nS	V_{DS}=300V I_D=1A V_{GS}=10V R_G=10Ω
Rise Time	T_r	-	17.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	11	-		
Fall Time	T_f	-	22	-		
Input Capacitance	C_{iss}	-	278	-	pF	V_{GS}=0V V_{DS}=25V f=1MHz
Output Capacitance	C_{oss}	-	22	-		
Reverse Transfer Capacitance	C_{rss}	-	3	-		
Source-Drain Diode						
Diode Forward Voltage [4]	V_{SD}	-	-	1.4	V	I_S=1A, V_{GS}=0V
Continuous Source Current [1]	I_S	-	-	1.2	A	
Pulsed Source Current [3]	I_{SM}	-	-	5	A	

Notes:
1. The data tested by surface mounted on a 1 inch^2 FR-4 board with 2oz copper.
2. When mounted on Min. copper pad.
3. Pulse width limited by maximum junction temperature. Pulse width≤10us, Duty cycle≤2%.
4. Pulse test: Pulse width≤300us, Duty cycle≤2%.

CHARACTERISTIC CURVES

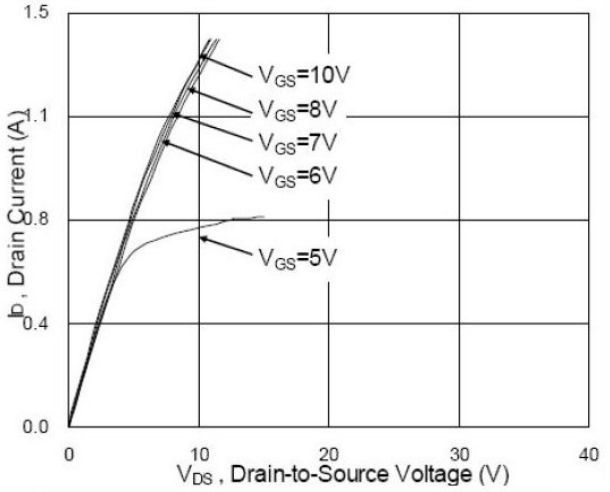


Fig.1 Typical Output Characteristics

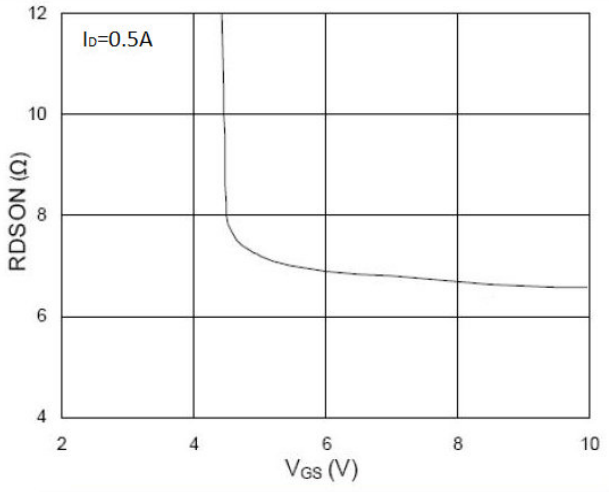


Fig.2 On-Resistance vs G-S Voltage

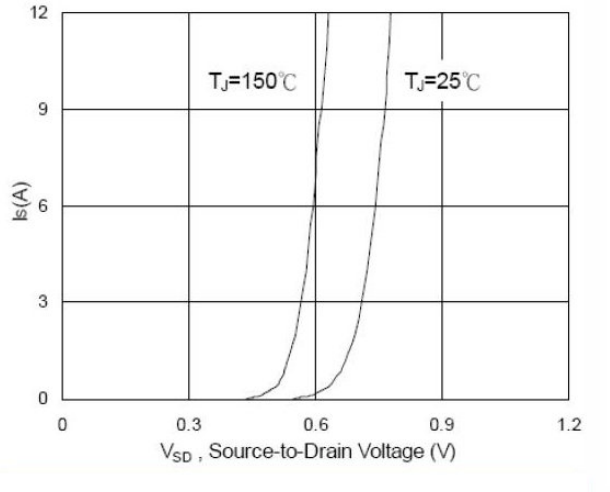


Fig.3 Source Drain Forward Characteristics

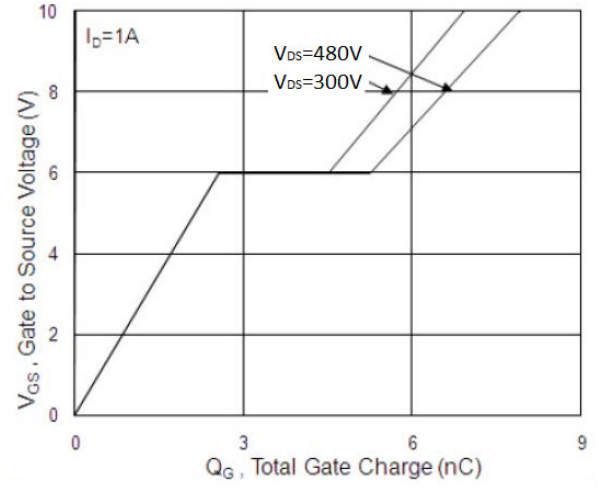


Fig.4 Gate-Charge Characteristics

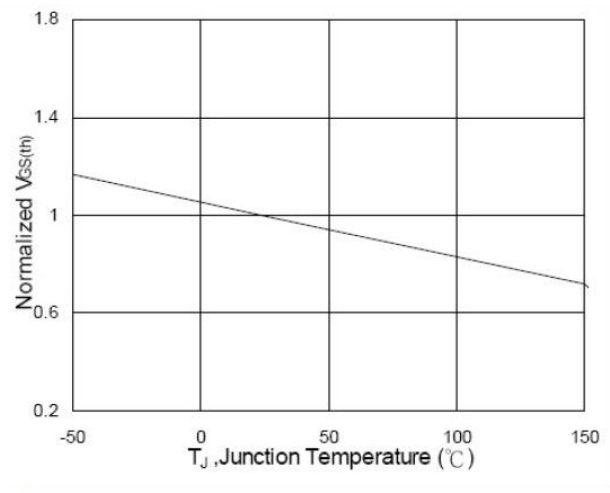


Fig.5 Normalized $V_{GS(th)}$ vs T_J

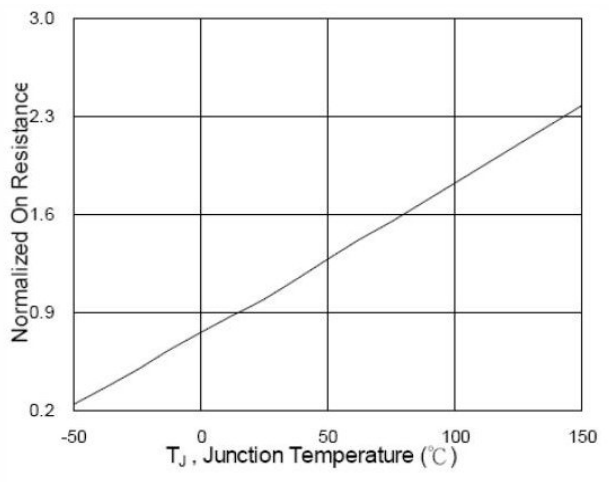


Fig.6 Normalized R_{DSON} vs T_J

CHARACTERISTIC CURVES

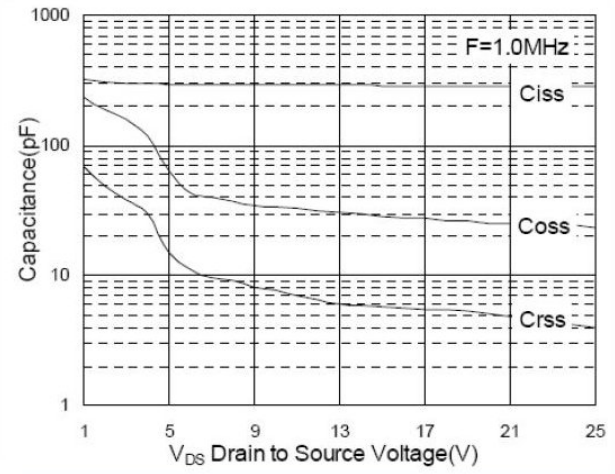


Fig.7 Capacitance

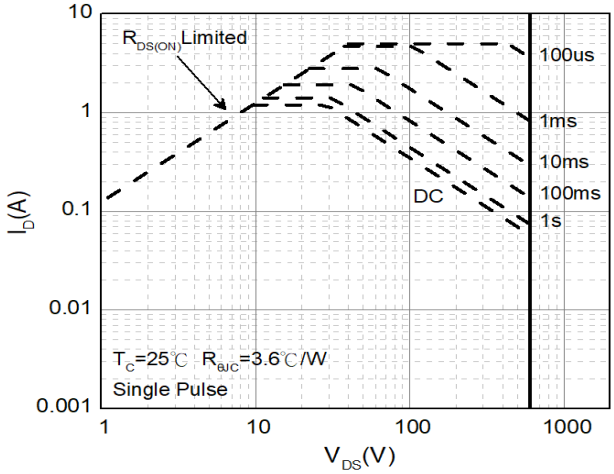


Fig.8 Safe Operating Area

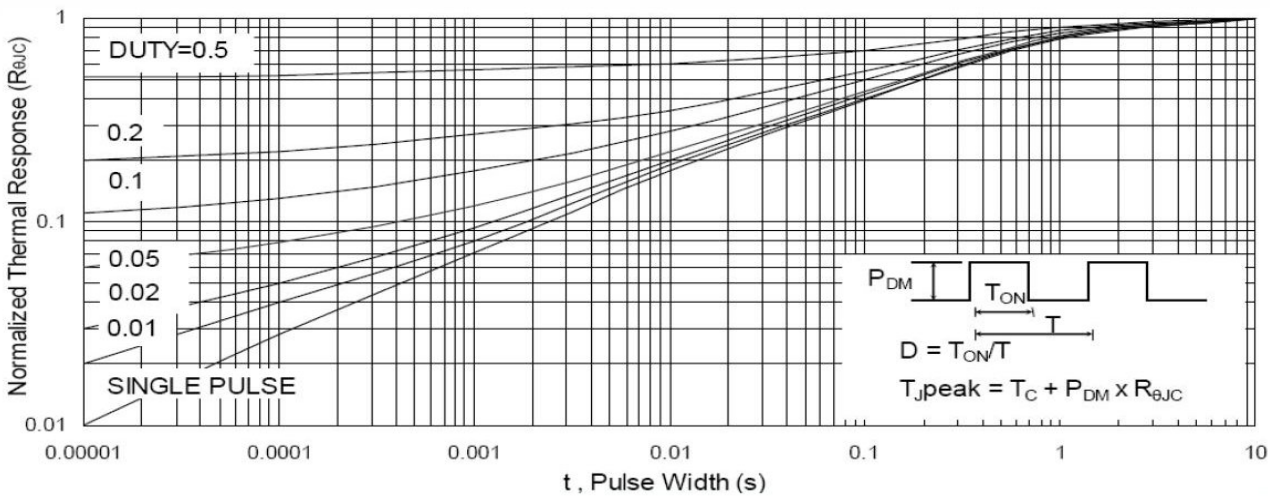


Fig.9 Normalized Maximum Transient Thermal Impedance

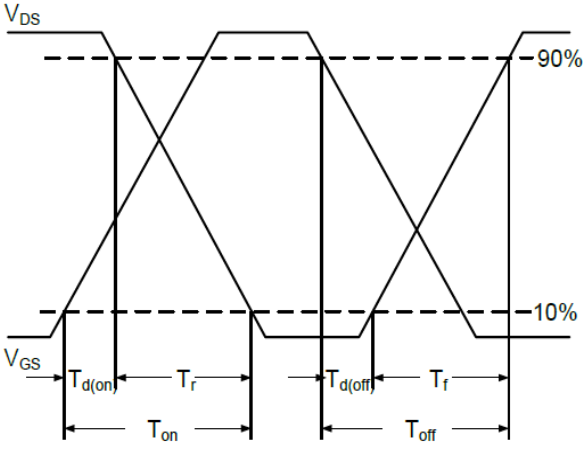


Fig.10 Switching Time Waveform

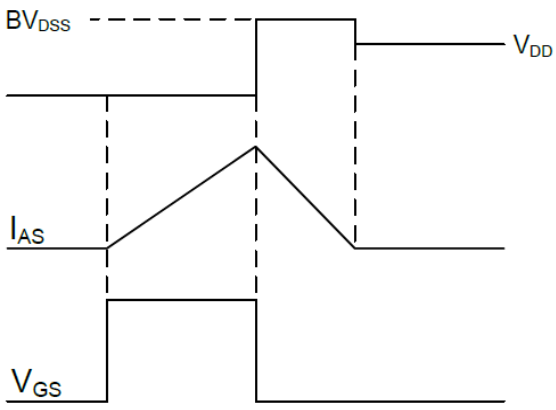


Fig.11 Unclamped Inductive Waveform