Elektronische Bauelemente

SSD05N65H-C

5A, 650V, $R_{DS(ON)}$ 0.9Ω
N-Channel Super Junction Power MOSFET

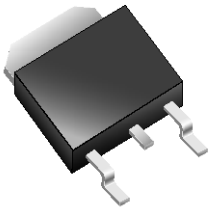
RoHS Compliant Product
A suffix of "-C" specifies halogen free

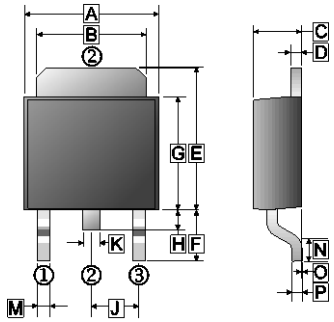
DESCRIPTION

The SSD05N65H-C is power MOSFET using Super Junction Technology that can realize very low on-resistance and gate charge. 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 SSD05N65H-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 Super Junction Technology
- Super Low Gate Charge
- Green Device Available

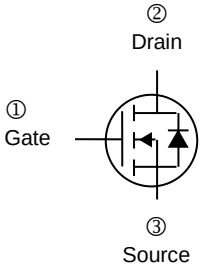
MARKING

PACKAGE INFORMATION

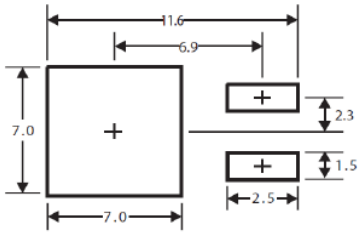
Package	MPQ	Leader Size
TO-252	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSD05N65H-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}	650	V
Gate-Source Voltage		V_{GS}	±30	V
Continuous Drain Current [1] @V_{GS}=10V	T_C=25°C	I_D	5	A
	T_C=100°C		3.2	
Pulsed Drain Current [2]		I_{DM}	14	A
Total Power Dissipation	T_C=25°C	P_D	36.7	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	150, -55~150	°C
Thermal Resistance Ratings				
Maximum Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	62	°C/W
Maximum Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	3.4	

ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	650	-	-	V	V_{GS}=0, 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, V_{DS}=0
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=650V, V_{GS}=0
Static Drain-Source On-Resistance [3]	$R_{DS(ON)}$	-	0.8	0.9	Ω	V_{GS}=10V, I_D=1.5A
Gate Resistance	R_g	-	20	-	Ω	V_{GS}=0, f=1MHz
Total Gate Charge	Q_g	-	9.8	-	nC	I_D=5A V_{DS}=130V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	2.6	-		
Gate-Drain Change	Q_{gd}	-	2.8	-		
Turn-on Delay Time	$T_{d(on)}$	-	13.5	-	nS	V_{DS}=325V I_D=5A V_{GS}=10V R_G=25Ω
Rise Time	T_r	-	24	-		
Turn-off Delay Time	$T_{d(off)}$	-	56	-		
Fall Time	T_f	-	23.5	-		
Input Capacitance	C_{iss}	-	382	-	pF	V_{GS}=0V V_{DS}=100V f=1MHz
Output Capacitance	C_{oss}	-	19	-		
Reverse Transfer Capacitance	C_{rss}	-	7	-		
Source-Drain Diode						
Diode Forward Voltage [3]	V_{SD}	-	-	1.4	V	V_{GS}=0, I_S=5A
Continuous Source Current [1]	I_S	-	-	5	A	
Reverse Recovery Time	T_{rr}	-	263	-	nS	I_S=5A V_{DD}=100V dI/dt=100A/μs
Reverse Recovery Charge	Q_{rr}	-	1.9	-	μC	
Reverse Recovery Current	I_{rrm}	-	14.4	-	A	

Notes:
1. Surface Mounted on 1inch^2 FR-4 Board with 2oz copper.
2. Pulse Width limited by maximum junction temperature, pulse width≦ 10us, duty cycle≦ 2%.
3. The data tested by pulsed, Pulse Width≦ 300μs, Duty Cycle≦ 2%.

TYPICAL CHARACTERISTICS CURVE

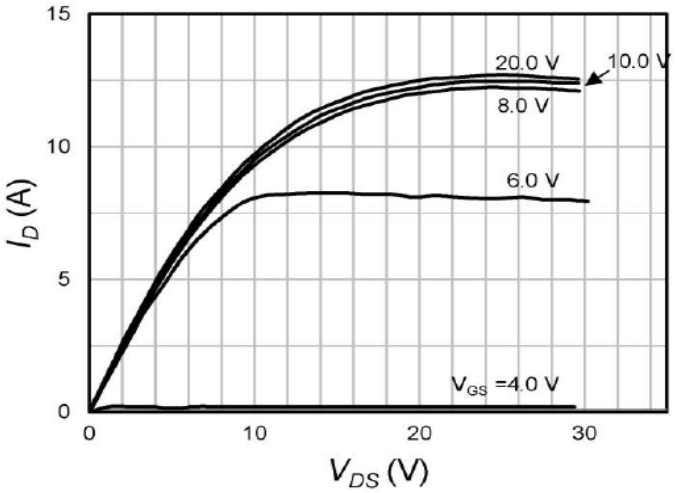


Fig.1 Typical Output Characteristics

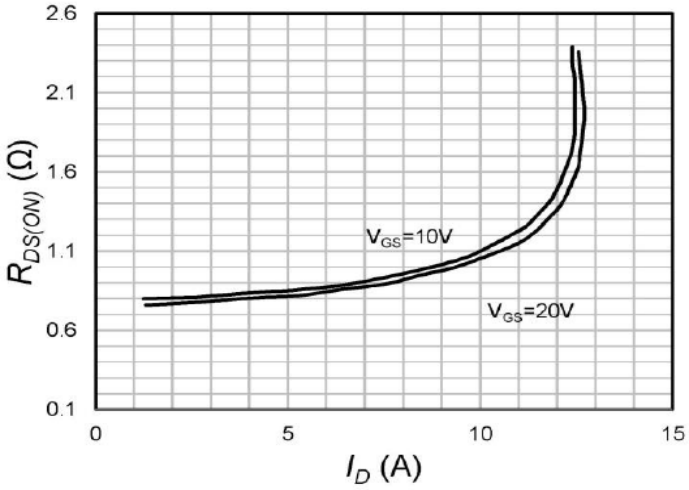


Fig.2 On-Resistance vs. Drain Current

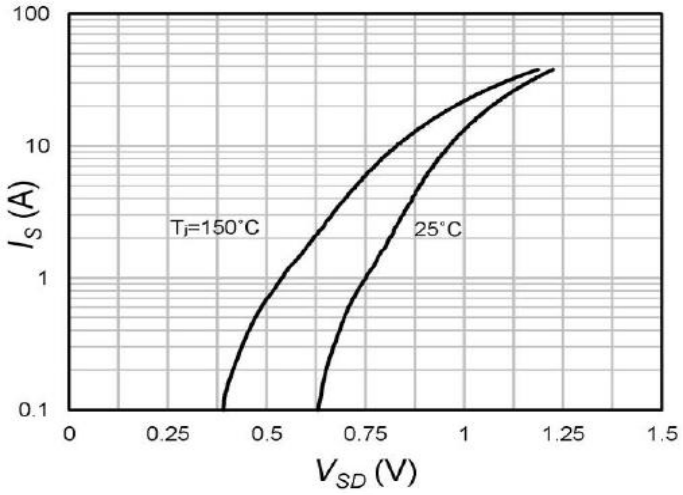


Fig.3 Forward Characteristics of Reverse

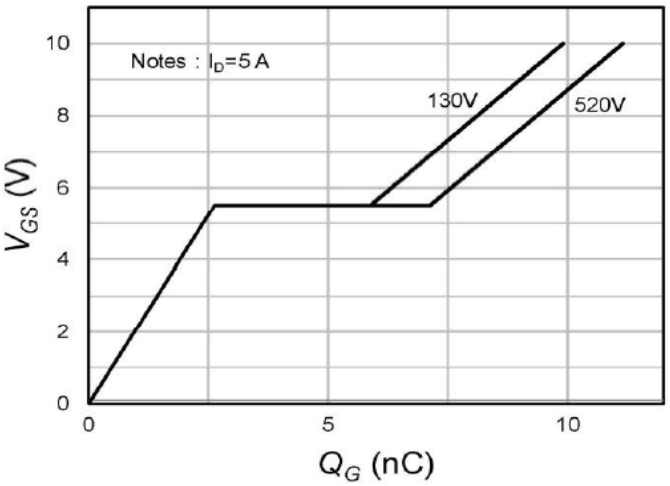


Fig.4 Gate-Charge Characteristics

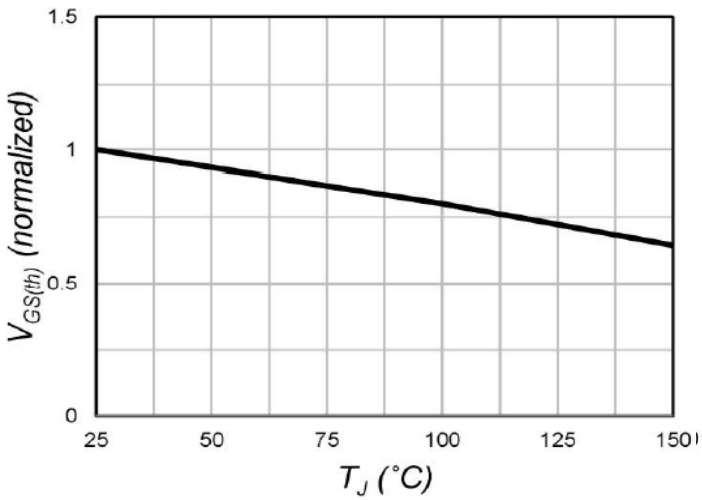


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

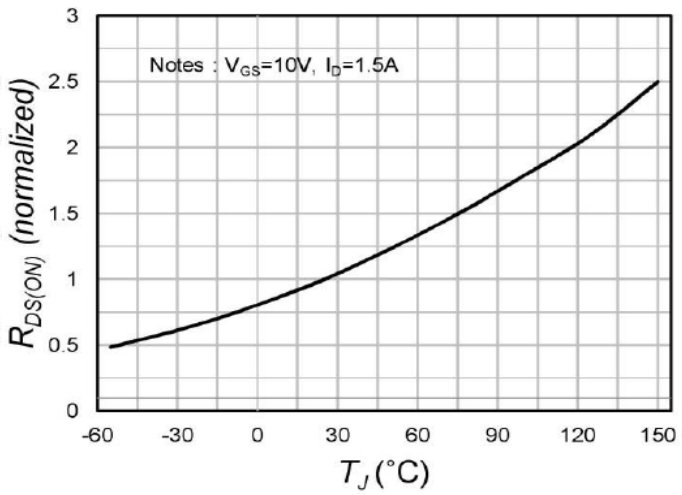


Fig.6 Normalized R_{DSON} vs. T_J

TYPICAL CHARACTERISTICS CURVE

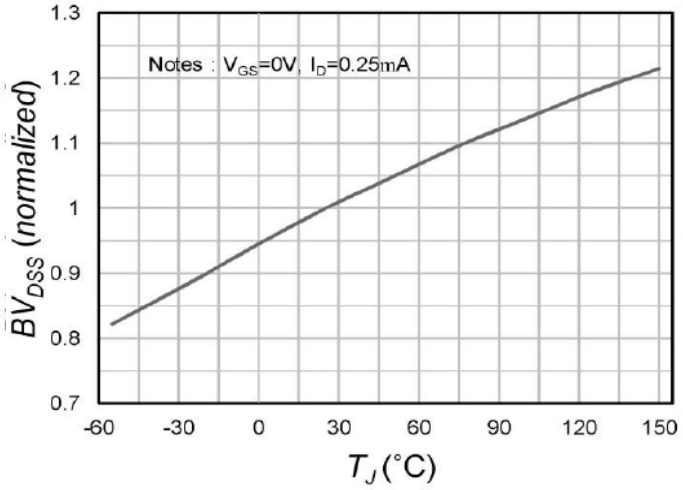


Fig.7 Drain-Source Breakdown Voltage(Normaized)

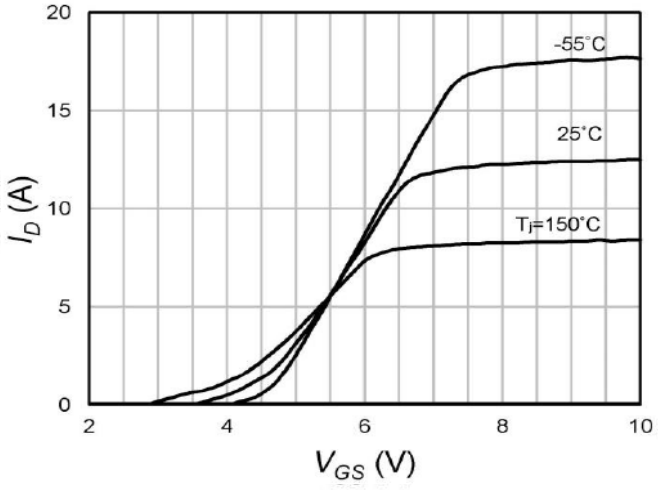


Fig.8 Transfer Characteristics

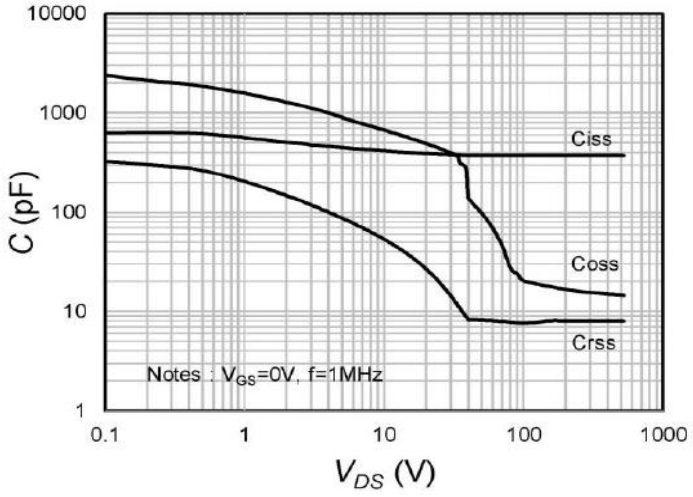


Fig.9 Capacitances

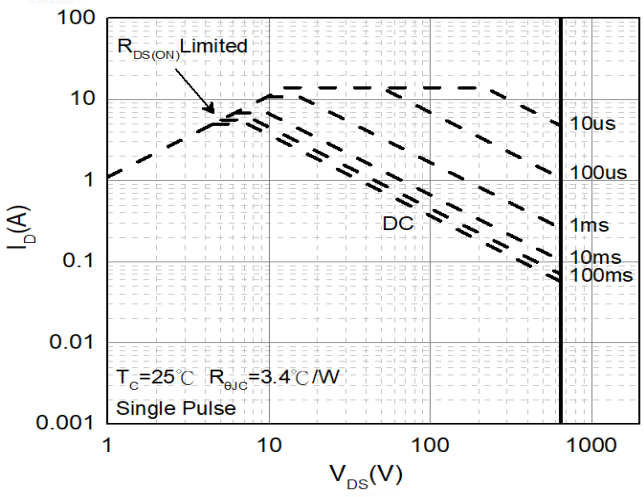


Fig.10 Safe Operating Area

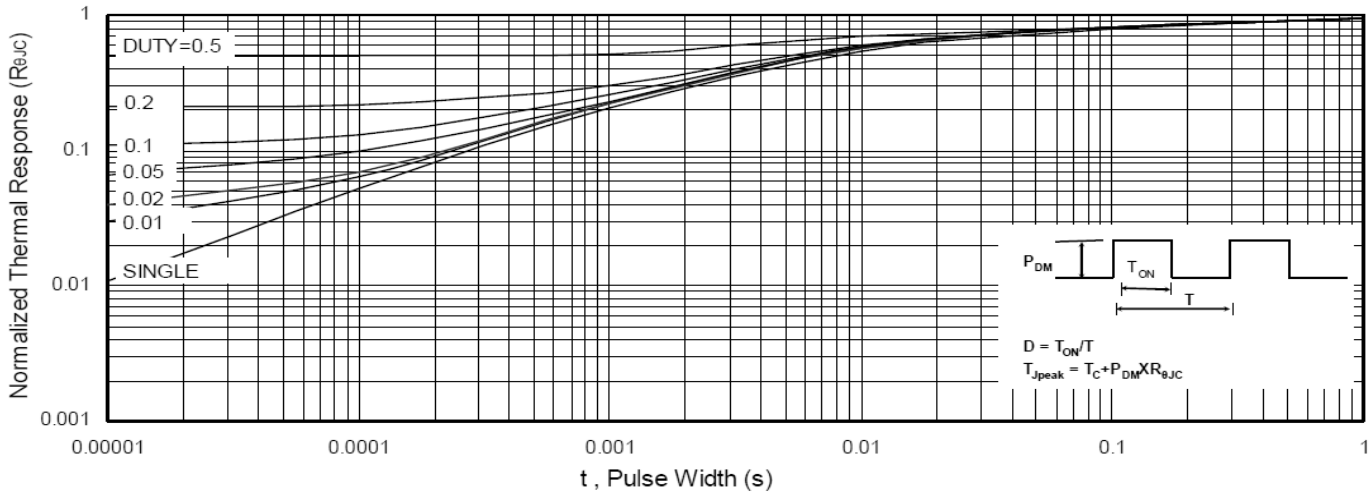


Fig.11 Normalized Maximum Transient Thermal Impedance