Elektronische Bauelemente

SPR73N08S-C

73A , 80V , $R_{DS(ON)}$ 6.5mΩ
N-Channel Fast Switching MOSFET

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

DESCRIPTION

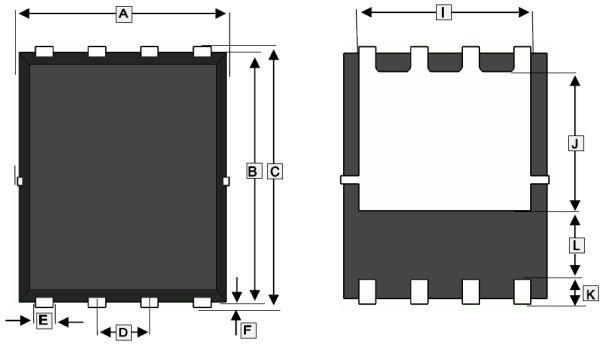
The SPR73N08S-C is the highest performance N-ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous rectification applications.

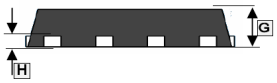
The SPR73N08S-C meet the RoHS and Green Product requirement with full function reliability approved.

FEATURES

- Green Device Available
- Super Low Gate Charge
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

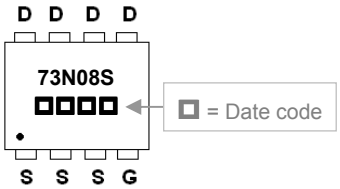
PR-8PP





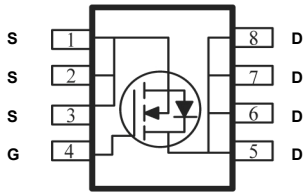
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.9	5.1	G	0.8	1.0
B	5.7	5.9	H	0.254 Ref.	
C	5.95	6.2	I	4.0 Ref.	
D	1.27 BSC.		J	3.4 Ref.	
E	0.35	0.49	K	0.6 Ref.	
F	0.1	0.2	L	1.4 Ref.	

MARKING



PACKAGE INFORMATION

Package	MPQ	Leader Size
PR-8PP	3K	13 inch



ORDER INFORMATION

Part Number	Type
SPR73N08S-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	80	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_C=25°C	I_D	73	A
	T_C=100°C		46	
Pulsed Drain Current [2]		I_{DM}	160	A
Total Power Dissipation [3]	T_C=25°C	P_D	56.8	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Data				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	62	°C / W
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	2.2	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	80	-	-	V	V_{GS}=0V, I_D=250μA
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transfer conductance	g_{fs}	-	75	-	S	V_{DS}=5V, I_D=20A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}=±20V, V_{DS}=0V
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=64V, V_{GS}=0V, T_J=25°C
		-	-	5		V_{DS}=64V, V_{GS}=0V, T_J=55°C
Static Drain-Source On-Resistance [2]	$R_{DS(ON)}$	-	4.3	6.5	mΩ	V_{GS}=10V, I_D=20A
		-	6.3	8.5		V_{GS}=4.5V, I_D=20A
Total Gate Charge	Q_g	-	40	-	nC	I_D=20A V_{DS}=40V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	7.2	-		
Gate-Drain Change	Q_{gd}	-	6.5	-		
Turn-on Delay Time	$T_{d(on)}$	-	8.3	-	nS	V_{DD}=40V I_D=20A V_{GS}=10V R_G=3Ω
Rise Time	T_r	-	4.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	36	-		
Fall Time	T_f	-	6.9	-		
Input Capacitance	C_{iss}	-	2860	-	pF	V_{GS}=0V V_{DS}=40V f=1MHz
Output Capacitance	C_{oss}	-	410	-		
Reverse Transfer Capacitance	C_{rss}	-	38	-		
Source-Drain Diode						
Diode Forward Voltage [2]	V_{SD}	-	-	1.2	V	I_S=1A, V_{GS}=0V, T_J=25°C
Continuous Source Current [1]	I_S	-	-	73	A	V_G=V_D=0V, Force Current
Reverse Recovery Time	t_{rr}	-	27	-	nS	I_F=20A, dI/dt=100A/μs, T_J=25°C
Reverse Recovery Charge	Q_{rr}	-	89	-	nC	

Notes:
1. The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2. The data tested by pulsed pulse width ≦ 300us, duty cycle ≦ 2%.
3. The power dissipation is limited by 150°C junction temperature.

CHARACTERISTIC CURVES

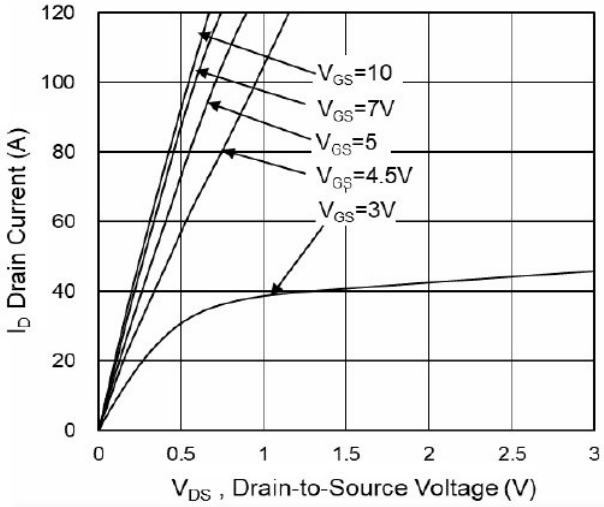


Fig.1 Typical Output Characteristics

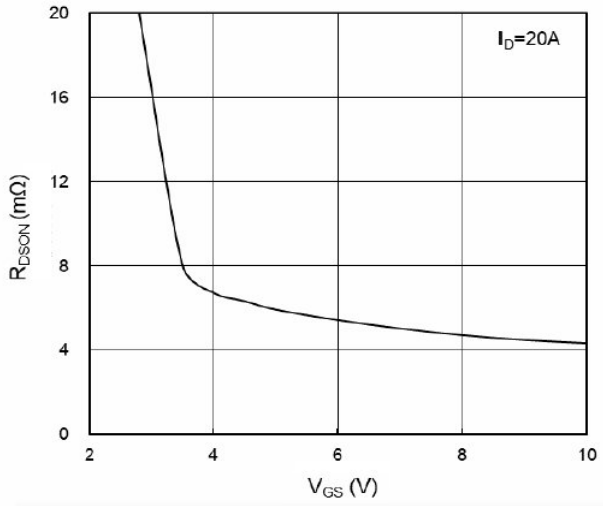


Fig.2 On-Resistance vs G-S Voltage

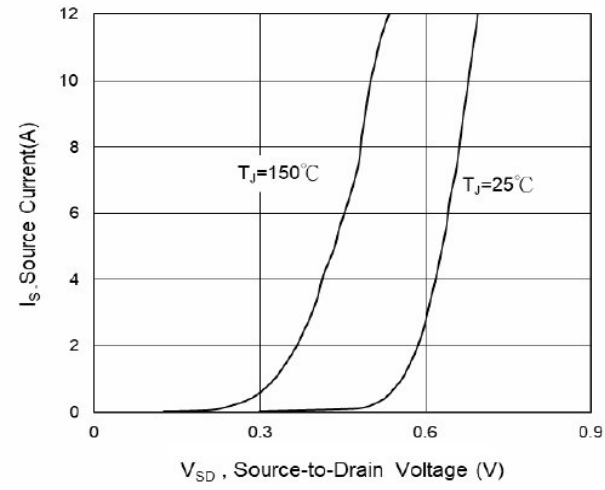


Fig.3 Source Drain Forward Characteristics

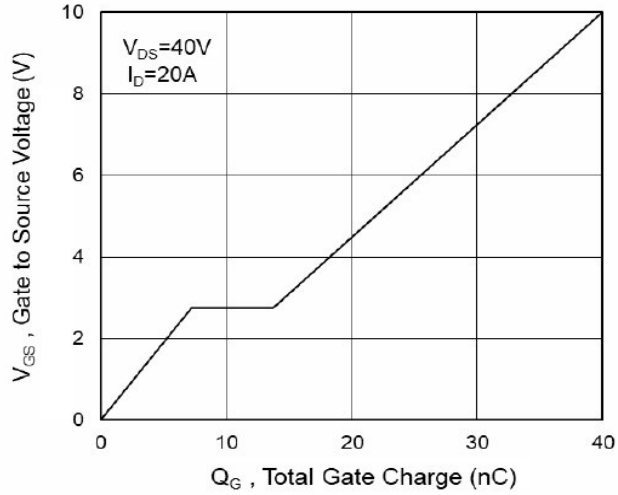


Fig.4 Gate-Charge Characteristics

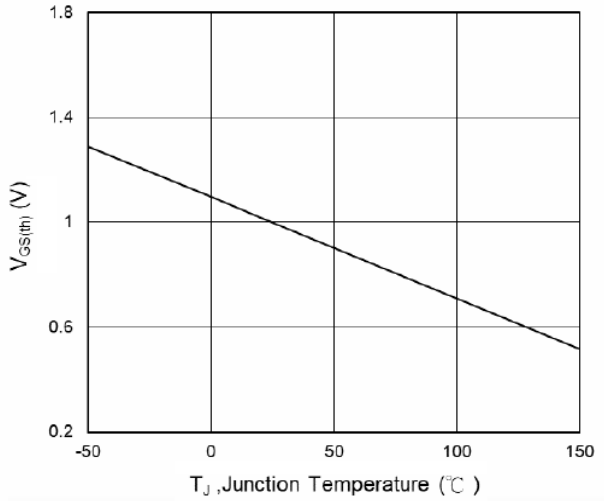


Fig.5 Normalized $V_{GS(th)}$ vs. T_J

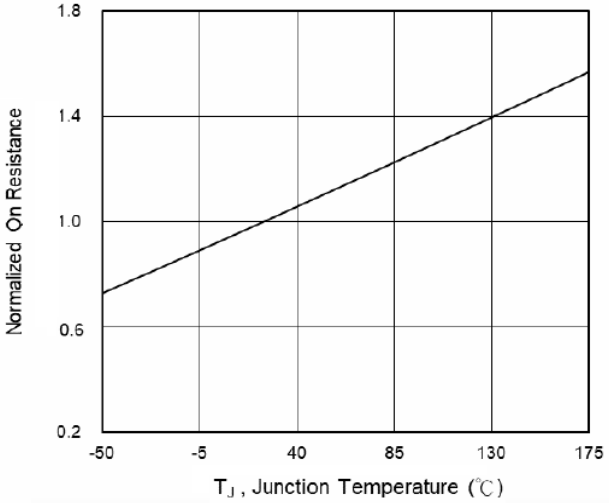


Fig.6 Normalized R_{DSON} vs. T_J

CHARACTERISTIC CURVES

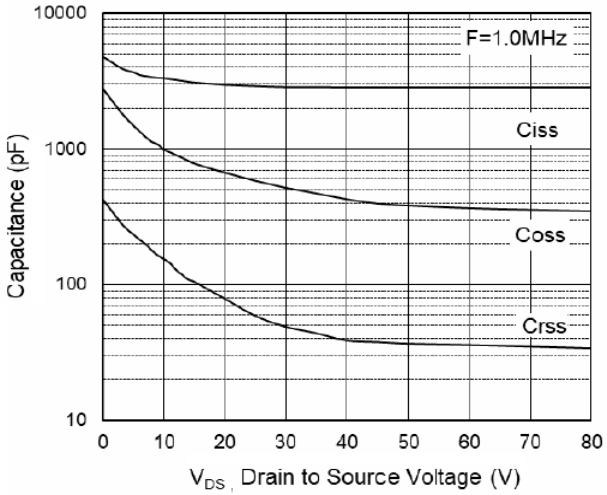


Fig.7 Capacitance

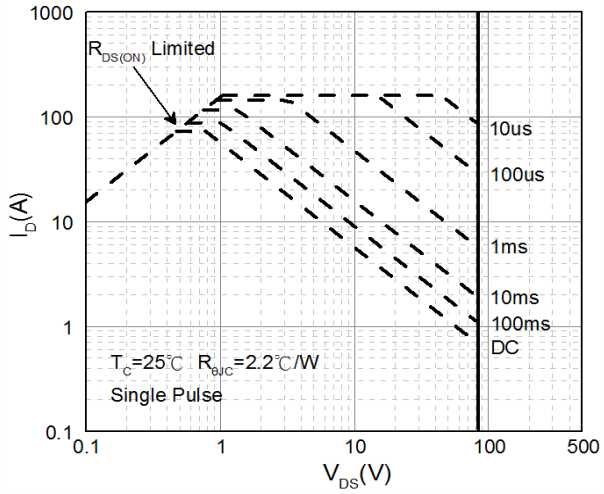


Fig.8 Safe Operating Area

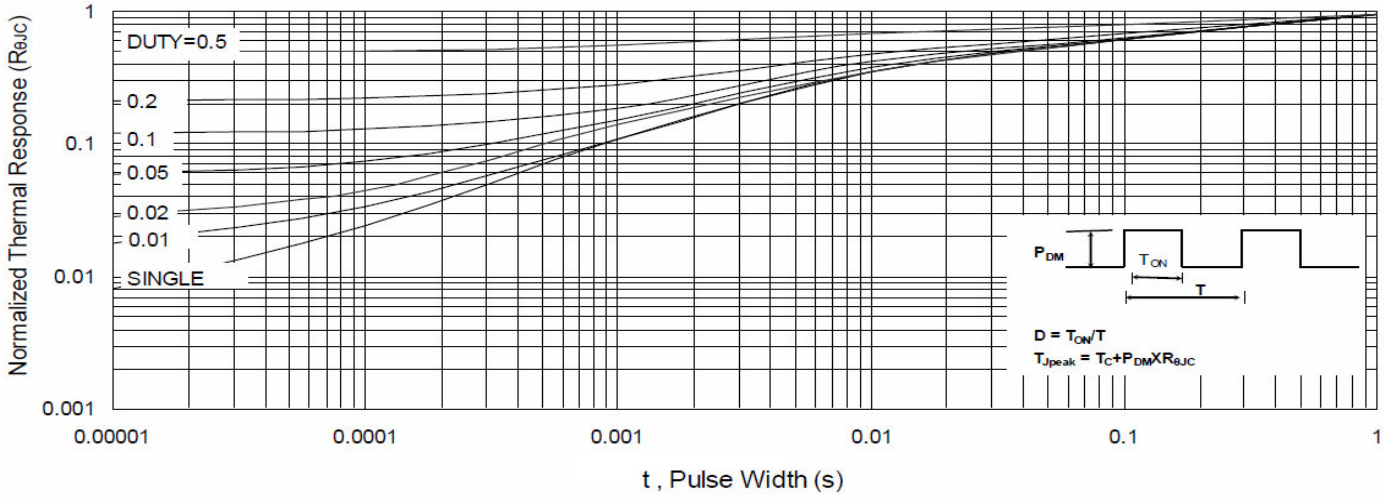


Fig.9 Normalized Maximum Transient Thermal Impedance

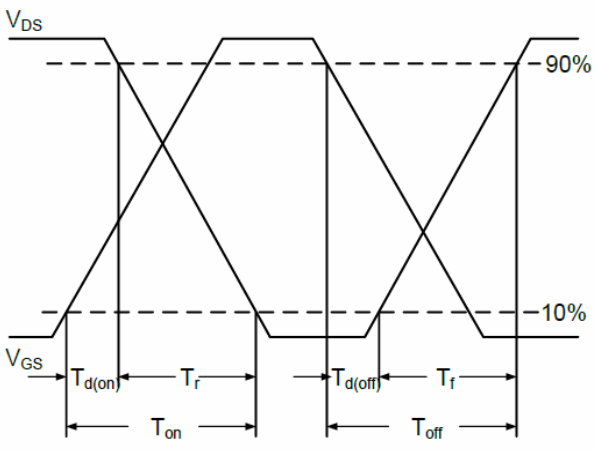


Fig.10 Switching Time Waveform

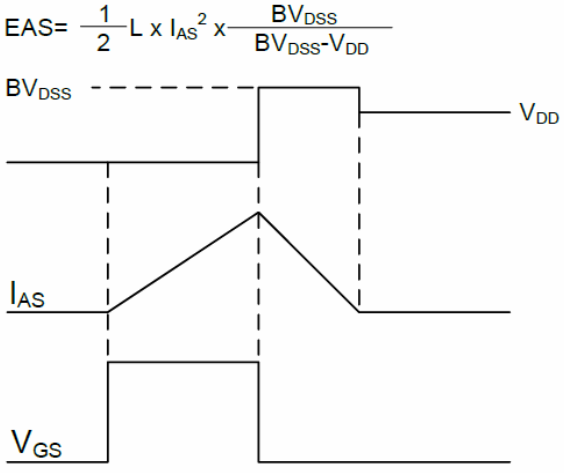


Fig.11 Unclamped Inductive Switching Waveform