Elektronische Bauelemente

SPR75N06-C

75A, 60V, $R_{DS(ON)}$ 8.5mΩ

N-Channel Enhancement Mode Power MOSFET

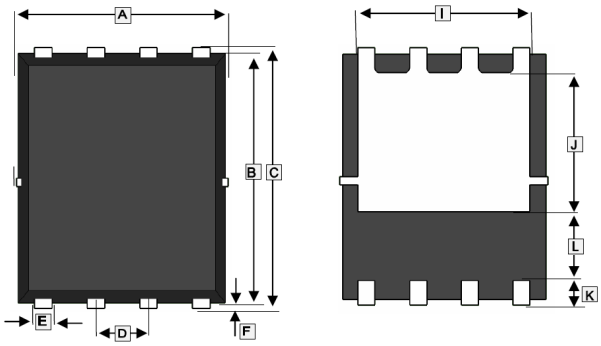
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SPR75N06-C provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness. The PR-8PP package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

PR-8PP

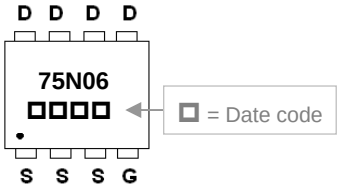


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.9	5.1	G	0.8	1.0
B	5.7	5.9	H	0.254 Ref.	
C	5.95	6.2	I	4.0 Ref.	
D	1.27 BSC.		J	3.4 Ref.	
E	0.35	0.49	K	0.6 Ref.	
F	0.1	0.2	L	1.4 Ref.	

FEATURES

- Lower Gate Charge
- Advanced high cell density Trench technology
- Green Device Available

MARKING

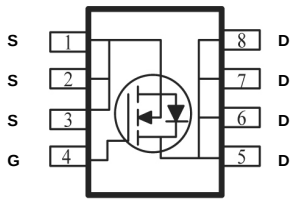


PACKAGE INFORMATION

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

ORDER INFORMATION

Part Number	Type
SPR75N06-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]@V_{GS}=10V	T_C=25℃	I_D	75	A
	T_C=100℃		47	
Pulsed Drain Current [2 4]		I_{DM}	280	A
Power Dissipation	T_C=25℃	P_D	89	W
Operating Junction & Storage Temperature		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1] (Max).		$R_{\theta JA}$	62	℃/W
Thermal Resistance Junction-Case [1] (Max).		$R_{\theta JC}$	1.4	

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	60	-	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage	$V_{GS(th)}$	1.2	-	2.5	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±16V
Drain-Source Leakage Current	I_{DSS}	-	-	1	uA	V_{DS}=48V, V_{GS}=0, T_J=25℃
		-	-	5		V_{DS}=48V, V_{GS}=0, T_J=55℃
Static Drain-Source On-Resistance [3]	$R_{DS(ON)}$	-	-	8.5	mΩ	V_{GS}=10V, I_D=10A
		-	-	12		V_{GS}=4.5V, I_D=5A
Gate Resistance	R_g	-	1.2	-	Ω	V_{DS}=V_{GS}=0, f =1.0MHz
Total Gate Charge	Q_g	-	57	-	nC	I_D=18A V_{DS}=30V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	8.7	-		
Gate-Drain Change	Q_{gd}	-	14	-		
Turn-on Delay Time [2]	$T_{d(on)}$	-	16.2	-	nS	V_{DD}=30V I_D=20A V_{GS}=10V R_G=3.3Ω
Rise Time	T_r	-	41.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	56.4	-		
Fall Time	T_f	-	16.2	-		
Input Capacitance	C_{iss}	-	3307	-	pF	V_{GS} =0 V_{DS}=30V f =1.0MHz
Output Capacitance	C_{oss}	-	201	-		
Reverse Transfer Capacitance	C_{rss}	-	151	-		
Source-Drain Diode						
Diode Forward Voltage [3]	V_{SD}	-	-	1.2	V	I_S=1A, V_{GS}=0
Continuous Source Current [1]	I_S	-	-	75	A	V_G=V_D=0, Force Current
Reverse Recovery Time	T_{rr}	-	22	-	nS	I_F=20A, dI/dt=100A/μs T_J=25℃
Reverse Recovery Charge	Q_{rr}	-	72	-	nC	

Notes:

1. The data tested by surface mounted on a 1 inch2 FR-4 board with 2OZ copper.
2. The Pulse width limited by maximum junction temperature, Pulse Width ≤300μs, Duty Cycle≤2%
3. The Pulse Test : Pulse Width ≤300μs, Duty Cycle≤2%
4. Package limit.

CHARACTERISTIC CURVES

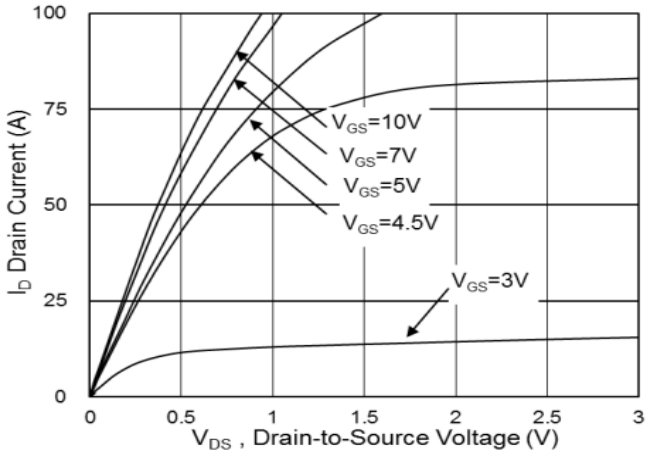


Fig.1 Typical Output Characteristics

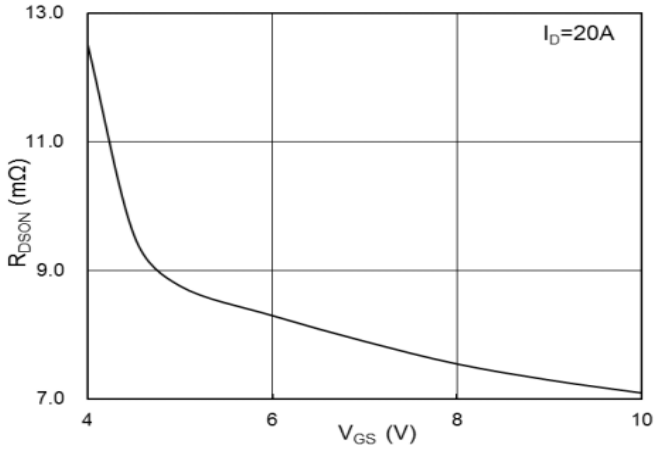


Fig.2 On-Resistance vs Gate-Source Voltage

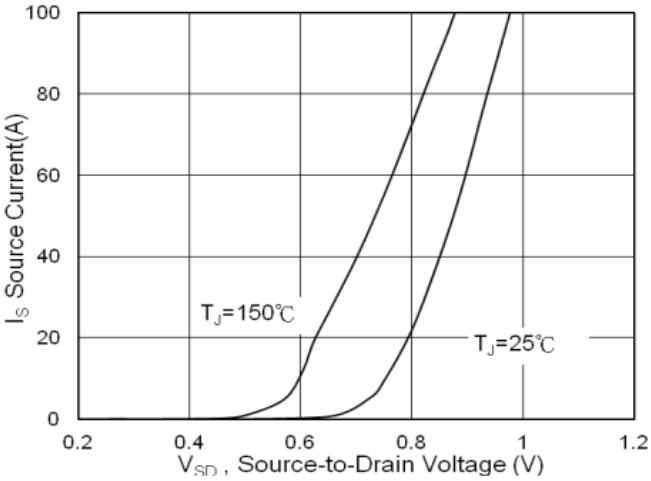


Fig.3 Forward Characteristics of Reverse

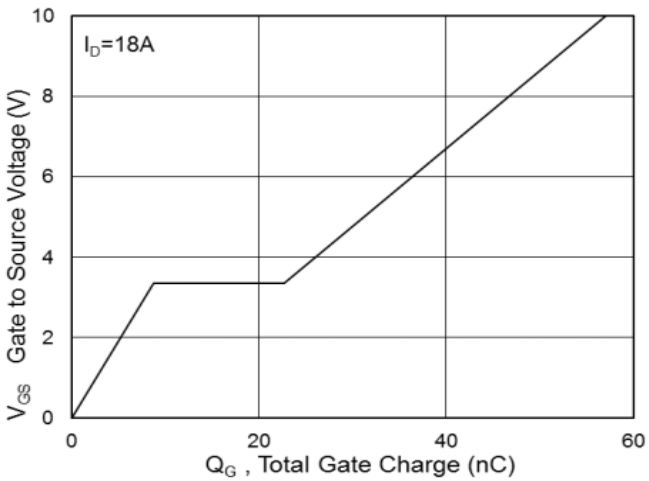


Fig.4 Gate-Charge Characteristics

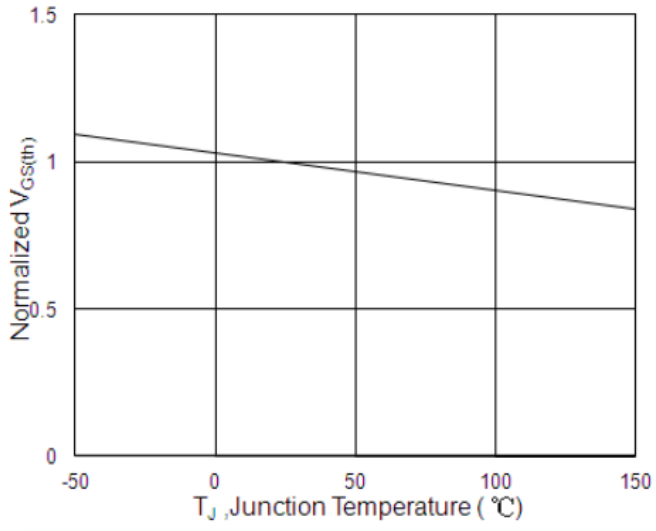


Fig.5 Normalized $V_{GS(th)}$ vs T_J

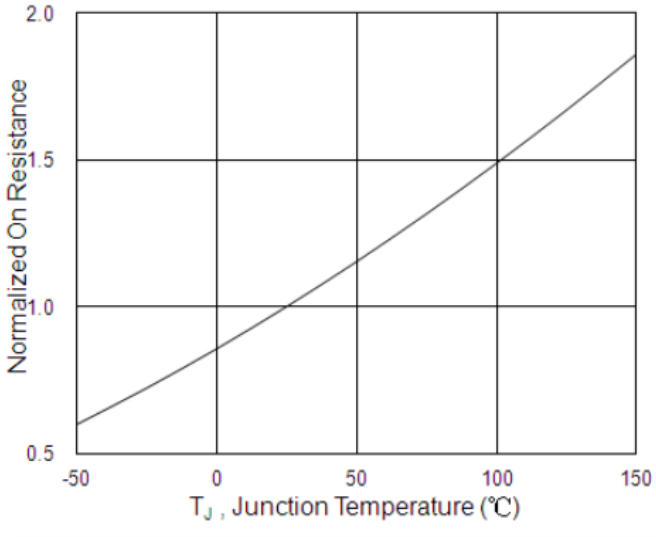


Fig.6 Normalized R_{DSON} vs T_J

CHARACTERISTIC CURVES

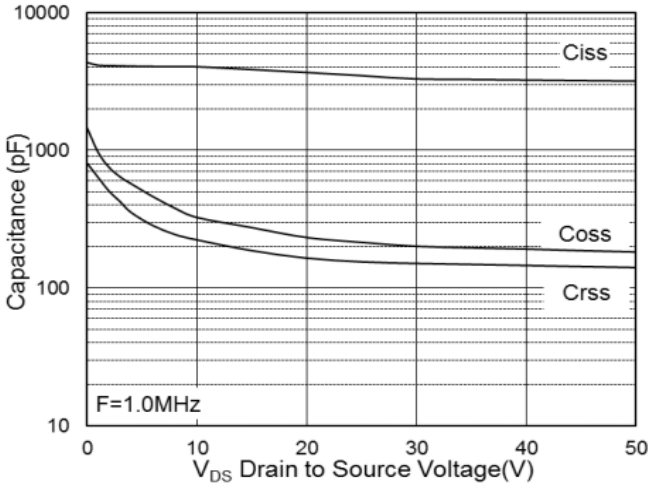


Fig.7 Capacitance

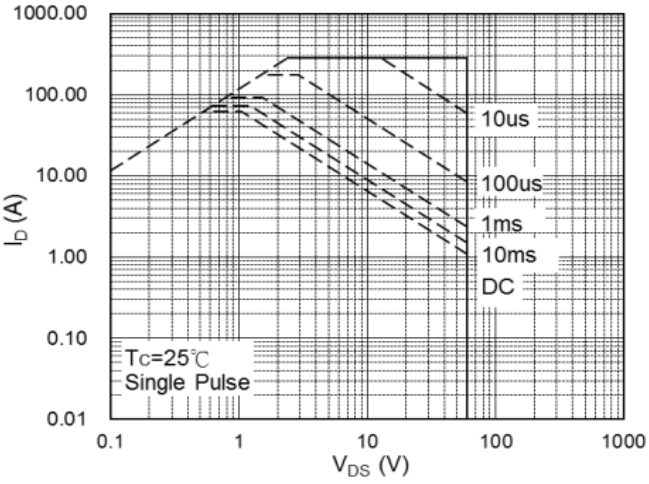


Fig.8 Safe Operating Area

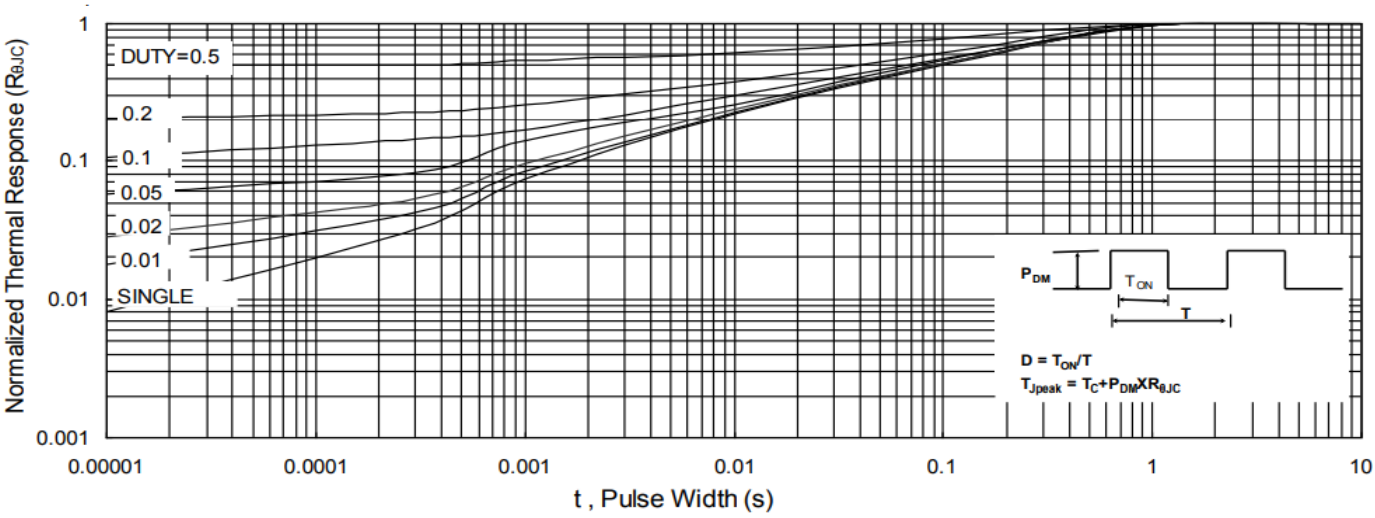


Fig.9 Normalized Maximum Transient Thermal Impedance

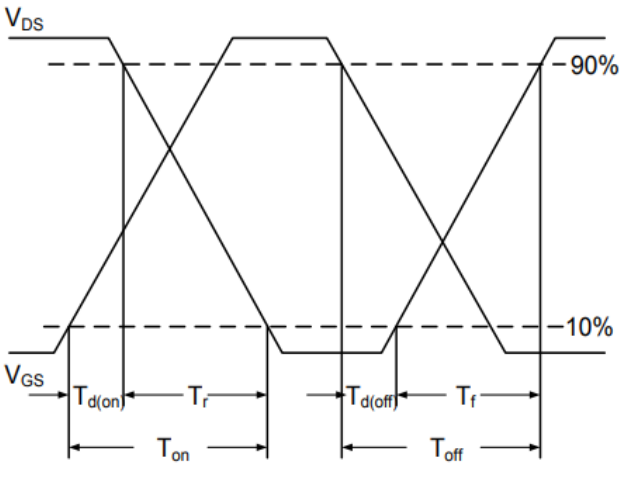


Fig.10 Switching Time Waveform

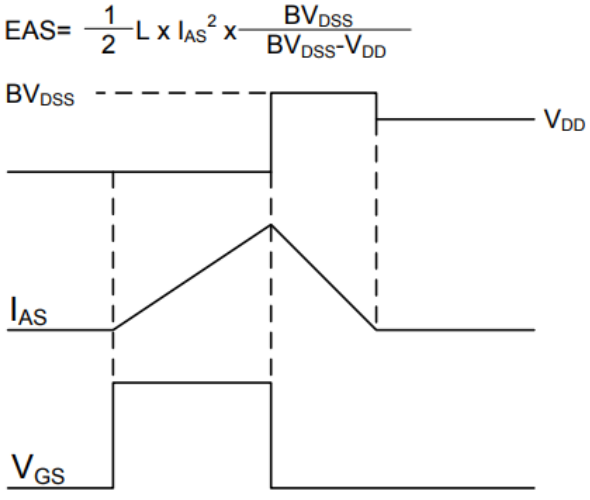


Fig.11 Unclamped Inductive Switching Waveform