Elektronische Bauelemente

SSPR90N03-C

90A, 30V, $R_{DS(ON)}$ 2.6mΩ

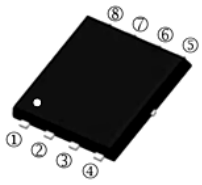
N-Channel Enhancement Mode Power MOSFET

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

DESCRIPTION

These N-Channel enhancement mode power field effect transistors are using trench DMOS technology. This advanced technology has been especially tailored to minimize on-state resistance, provide superior switching performance, and withstand high energy pulse in the avalanche and commutation mode. These devices are well suited for high efficiency fast switching application.

SPR-8PP



FEATURES

- Improved dv/dt capability
- Fast switching
- Green Device Available

APPLICATION

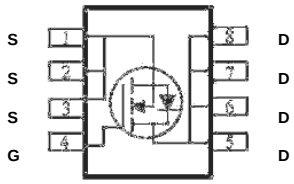
- Networking
- Load Switch
- LED applications

MARKING

NC2P6

PACKAGE INFORMATION

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



ORDER INFORMATION

Part Number	Type
SSPR90N03-C	Lead (Pb)-free and Halogen-free

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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C=25℃	I_D	90	A
Pulsed Drain Current [1]		I_{DM}	360	A
Power Dissipation	T_C=25℃	P_D	51	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	62	℃/W
Thermal Resistance Junction-Case		$R_{\theta JC}$	2.43	

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	V_{GS}=0V, 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}=±20V, V_{DS}=0V
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=24V, V_{GS}=0V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	2.6	mΩ	V_{GS}=10V, I_D=20A
		-	-	5		V_{GS}=4.5V, I_D=15A
Gate Resistance	R_g	-	1	-	Ω	V_{GS}=0V, V_{DS}=0V, f=1MHz
Forward Transconductance	gfs	-	7	-	S	V_{DS}=10V, I_D=3A
Total Gate Charge	Q_g	-	24	-	nC	V_{DS}=15V V_{GS}=10V I_D=45A
Gate-Source Charge	Q_{gs}	-	5.8	-		
Gate-Drain Change	Q_{gd}	-	4.5	-		
Turn-on Delay Time	$T_{d(on)}$	-	4	-	nS	V_{DD}=15V V_{GS}=10V I_D=45A R_G=6Ω
Rise Time	T_r	-	6	-		
Turn-off Delay Time	$T_{d(off)}$	-	12	-		
Fall Time	T_f	-	8	-		
Input Capacitance	C_{iss}	-	1870	-	pF	V_{DS}=15V V_{GS}=0V f=1MHz
Output Capacitance	C_{oss}	-	1380	-		
Reverse Transfer Capacitance	C_{rss}	-	18	-		
Source-Drain Diode						
Continuous Source Current	I_S	-	-	90	A	V_G=V_D=0V, Force Current
Diode Forward Voltage	V_{SD}	-	-	1	V	I_S=1A, V_{GS}=0V

Notes:
1. Repetitive Rating：Pulsed width limited by maximum junction temperature.
2. The data tested by pulsed , pulse width ≦ 300us , duty cycle ≦ 2%.
3. Essentially independent of operating temperature.

TYPICAL CHARACTERISTICS

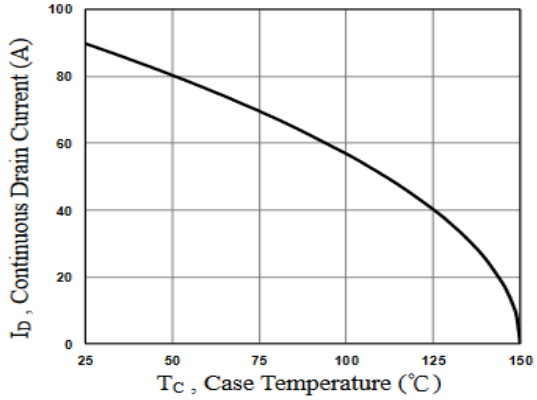


Fig.1 Continuous Drain Current vs. T_c

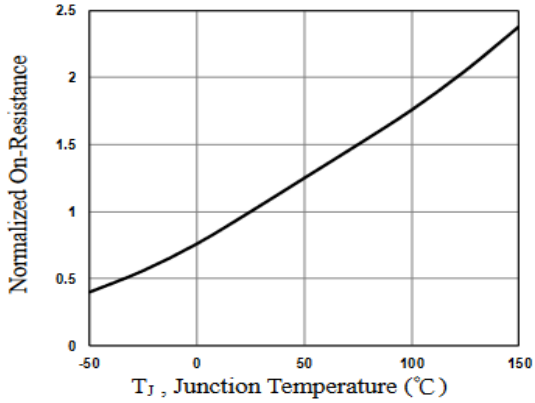


Fig.2 Normalized RDSON vs. T_J

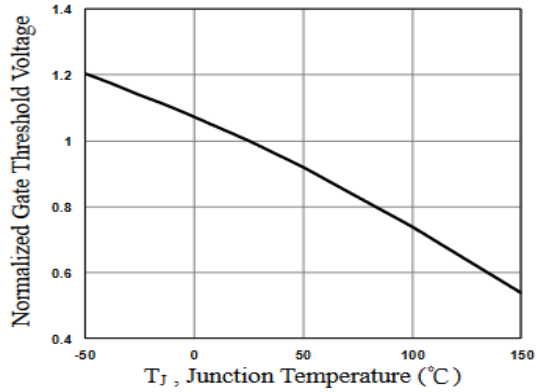


Fig.3 Normalized V_{th} vs. T_J

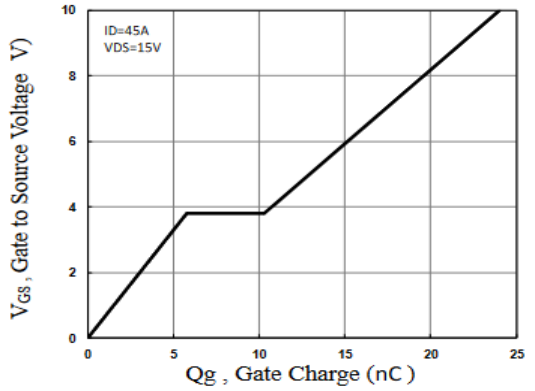


Fig.4 Gate Charge Characteristics

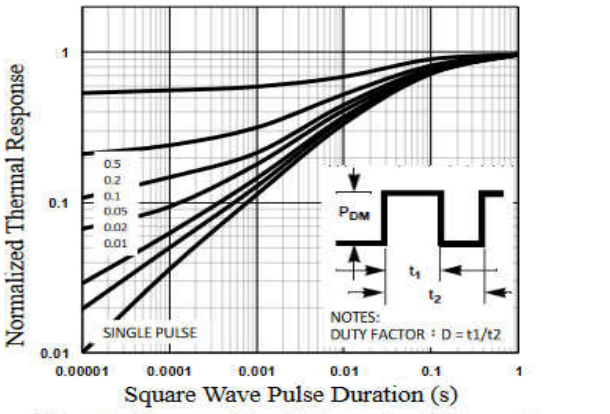


Fig.5 Normalized Transient Impedance

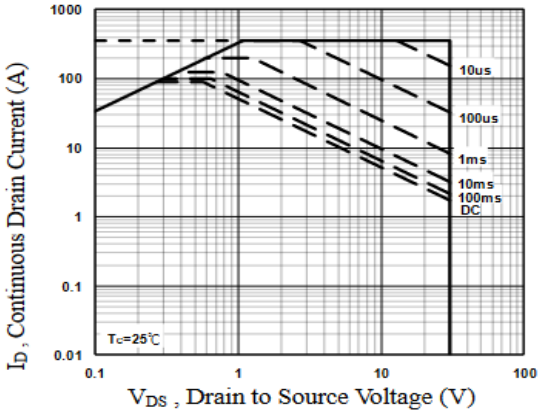


Fig.6 Maximum Safe Operation Area

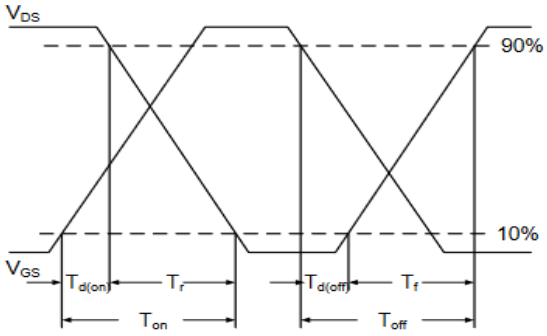
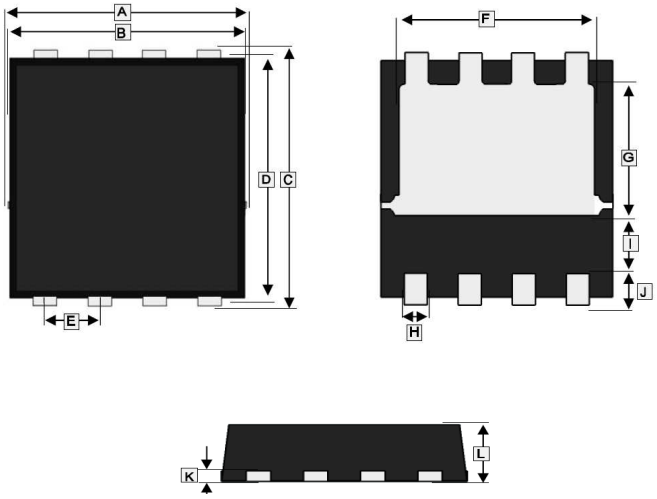


Fig.7 Switching Time Waveform

PACKAGE OUTLINE DIMENSIONS

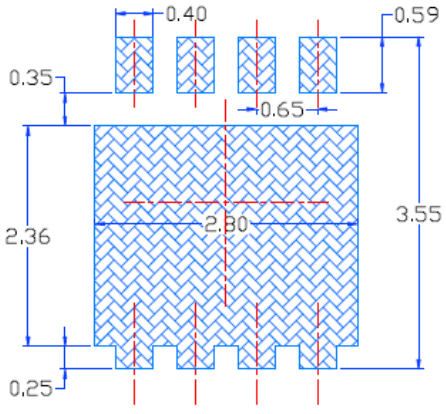
SPR-8PP



REF.	Millimeter	
	Min.	Max.
A	3.00	3.45
B	3.00	3.25
C	3.00	3.60
D	2.90	3.20
E	0.65 BSC.	
F	2.25	2.69
G	1.35	1.98
H	0.20	0.40
I	0.57	0.87
J	0.30	0.60
K	0.10	0.25
L	0.60	0.90

MOUNTING PAD LAYOUT

SPR-8PP



*Dimensions in millimeters