Elektronische Bauelemente

SSPF7490N

8.3A, 150V, $R_{DS(ON)}$ 48 mΩ
N-Ch Enhancement Mode Power MOSFET

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

DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation.

FEATURES

- Low $R_{DS(on)}$ trench technology
- Low thermal impedance
- Fast switching speed

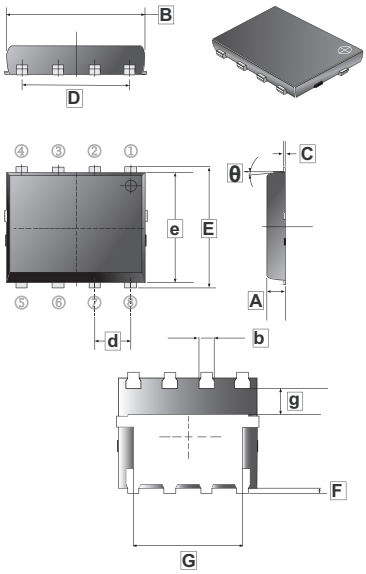
APPLICATION

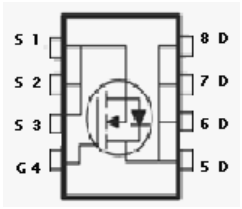
- Industrial D/C/DC conversion circuits
- White LED boost converters
- Automotive systems

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN5x6-8PP	3K	13 inch

DFN5x6-8PP





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.85	1	θ	0°	10°
B	5.2 BSC		b	0.3	0.5
C	0.15	0.25	d	1.27 BSC	
D	3.81 BSC		e	5.55 BSC	
E	6.05 BSC		g	1.2 TYP.	
F	0.25 BSC				
G	3.81 BSC				

MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25℃	I_D	8.3	A
	T_A=70℃		6.7	A
Pulsed Drain Current [2]		I_{DM}	50	A
Continuous Source Current (Diode Conduction) [1]		I_S	7.1	A
Power Dissipation [1]	T_A=25℃	P_D	5	W
	T_A=70℃		3.2	W
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Maximum Thermal Resistance from Junction to Ambient [1]	t≦10 sec	$R_{\theta JA}$	25	℃ / W
	Steady State		65	℃ / W

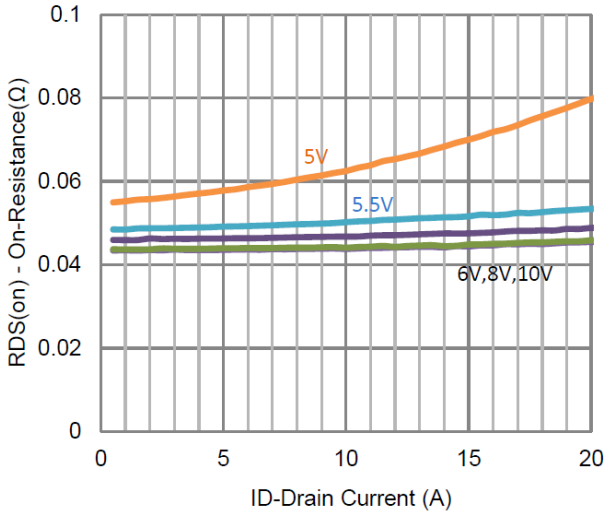
Notes:
1. The surface of the device is mounted on a 1" x 1" FR4 board.
2. The pulse width is limited by the maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

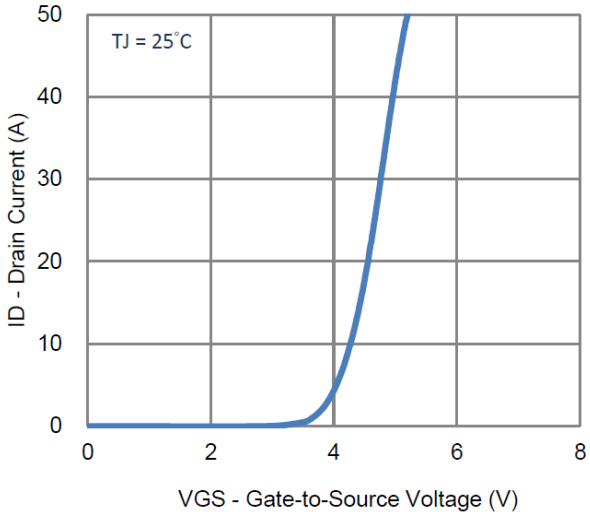
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Static [1]						
Gate-Source Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0V, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=120V, V_{GS}=0
		-	-	25		V_{DS}=120V, V_{GS}=0, T_J=55℃
On-State Drain Current	$I_{D(on)}$	15	-	-	A	V_{DS}=5V, V_{GS}=10V
Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	48	mΩ	V_{GS}=10V, I_D=8.3A
		-	-	54		V_{GS}=5.5V, I_D=6.4A
Forward Transconductance	g_{fs}	-	15	-	S	V_{DS}=15V, I_D=8.3A
Diode Forward Voltage	V_{SD}	-	0.74	-	V	I_S=3.6A, V_{GS}=0
Dynamic [1]						
Total Gate Charge	Q_g	-	58	-	nC	V_{DS}=75V V_{GS}=5.5V I_D=8.3A
Gate-Source Charge	Q_{gs}	-	17	-		
Gate-Drain Charge	Q_{gd}	-	35	-		
Input Capacitance	C_{iss}	-	4388	-	pF	V_{DS}=15V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	260	-		
Reverse Transfer Capacitance	C_{rss}	-	239	-		
Turn-On Delay Time	$T_{d(on)}$	-	20	-	nS	V_{DS}=75V V_{GEN}=10V I_D=8.3A R_L=9.1Ω R_{GEN}=6Ω
Rise Time	T_r	-	35	-		
Turn-Off Delay Time	$T_{d(off)}$	-	122	-		
Fall Time	T_f	-	38	-		

Notes:
1. Pulse test：Pulse width≦300μs, duty cycle≦2%.

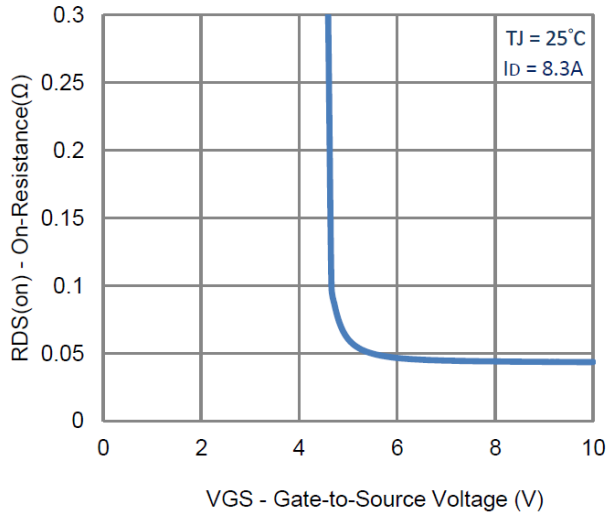
CHARACTERISTIC CURVE



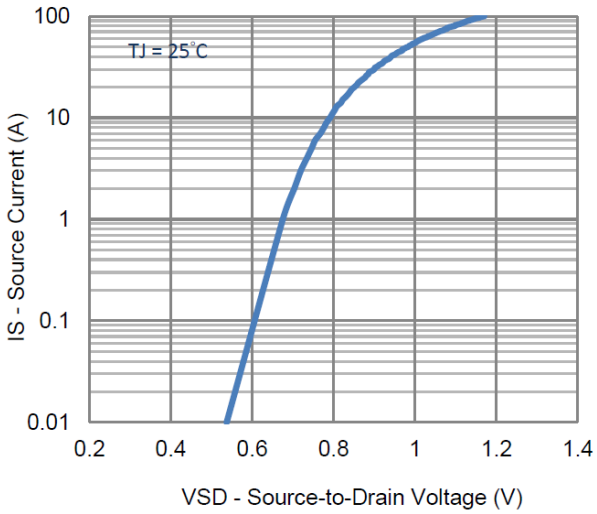
1. On-Resistance vs. Drain Current



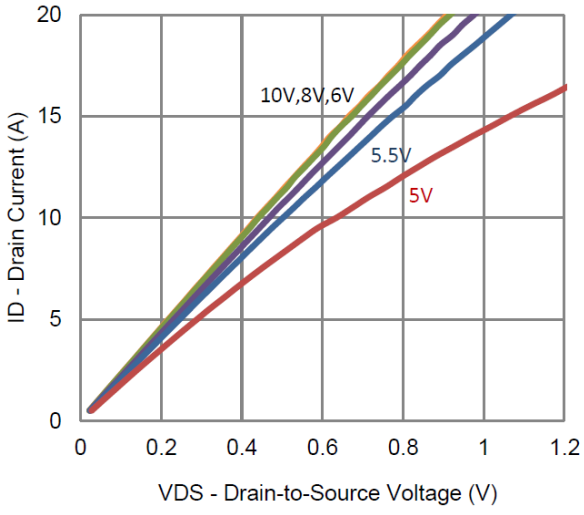
2. Transfer Characteristics



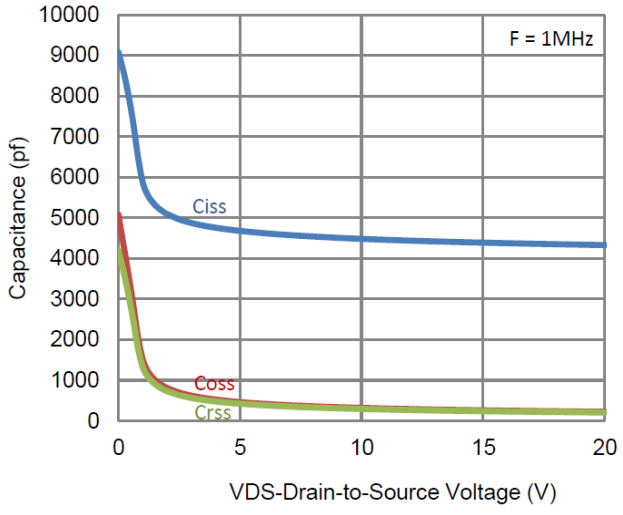
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

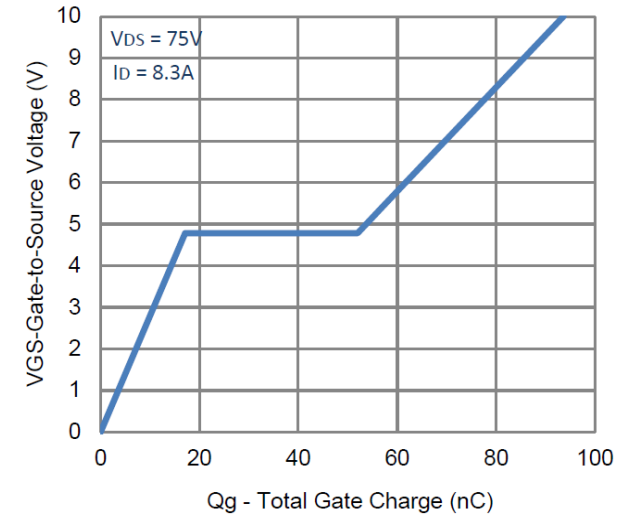


5. Output Characteristics

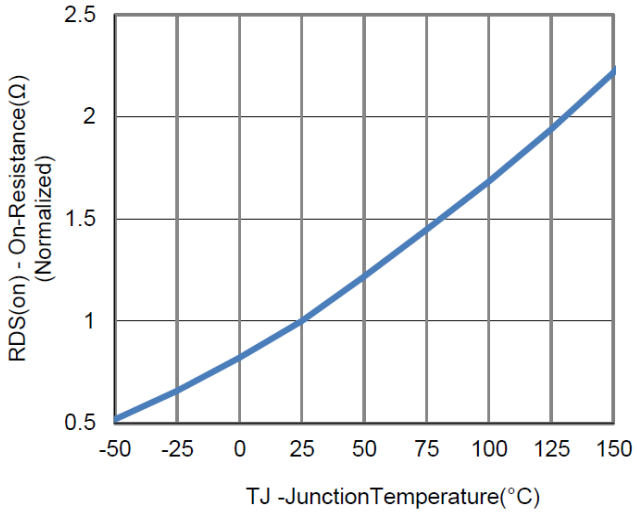


6. Capacitance

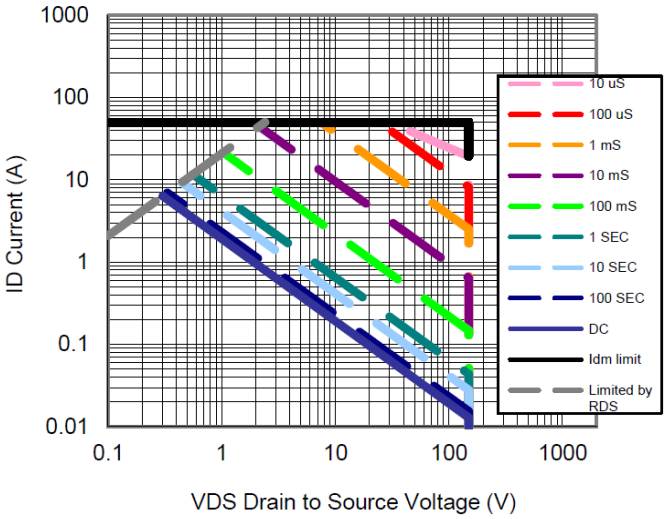
CHARACTERISTIC CURVE



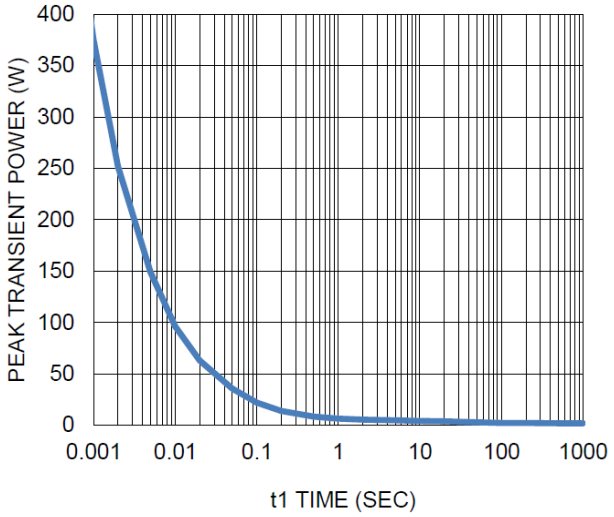
7. Gate Charge



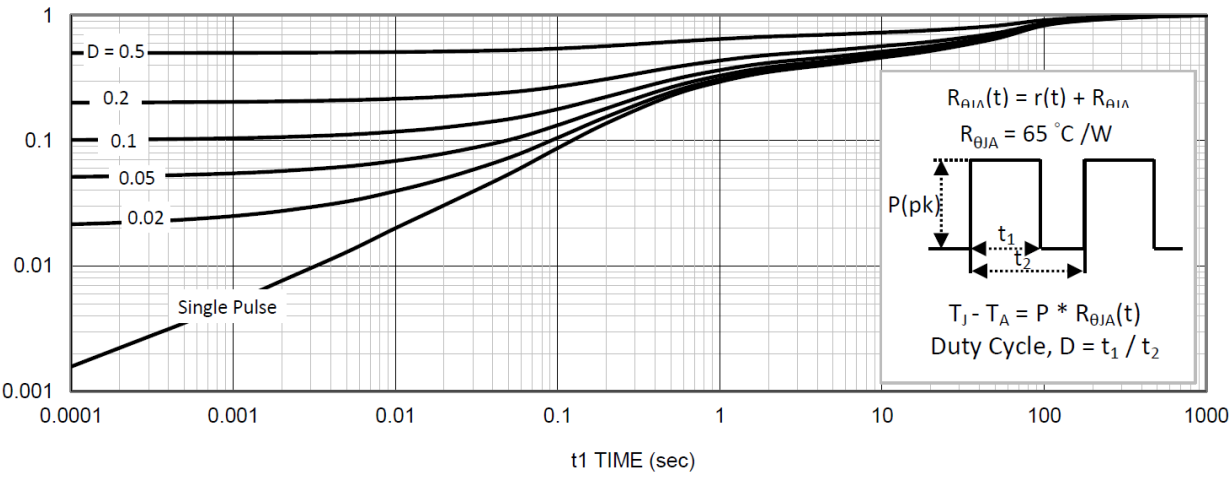
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient