Elektronische Bauelemente

SSP7454N

26A, 60V, $R_{DS(ON)}$ 4.9mΩ
N-Channel Enhancement 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. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

FEATURES

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

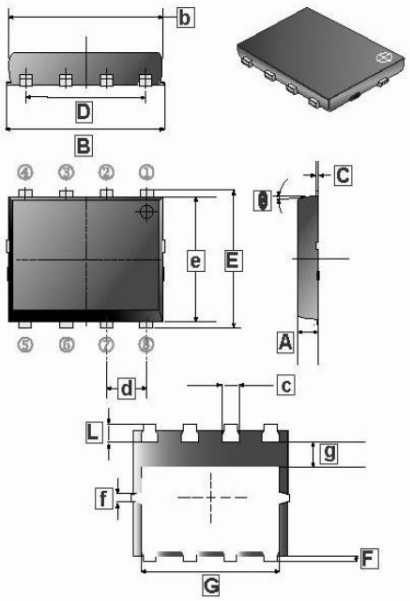
APPLICATIONS

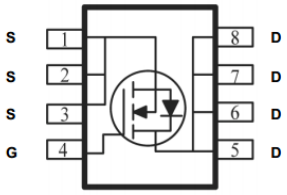
- DC/DC conversion circuits.
- Motor drives.

PACKAGE INFORMATION

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

SOP-8PP





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.80	1.00	θ	0°	10°
B	5.3 BSC.		b	5.2 BCS	
C	0.15	0.25	c	0.20	0.50
D	3.8 BCS.		d	1.27BSC	
E	6.05 BCS.		e	5.65 BCS.	
F	0.03	0.30	f	0.10	0.40
G	4.35 BCS.		g	1.3 BCS.	
L	0.40	0.70			

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25℃	I_D	26	A
	T_A=70℃		21	
Pulsed Drain Current [2]		I_{DM}	100	A
Continuous Source Current (Diode Conduction) [1]		I_S	7.3	A
Power Dissipation [1]	T_A=25℃	P_D	5	W
	T_A=70℃		3.2	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	150, -55~150	℃
Thermal Resistance Rating				
Maximum Thermal Resistance from Junction to Ambient [1]	t≦10 sec	$R_{\theta JA}$	25	℃ / W
	Steady State		65	

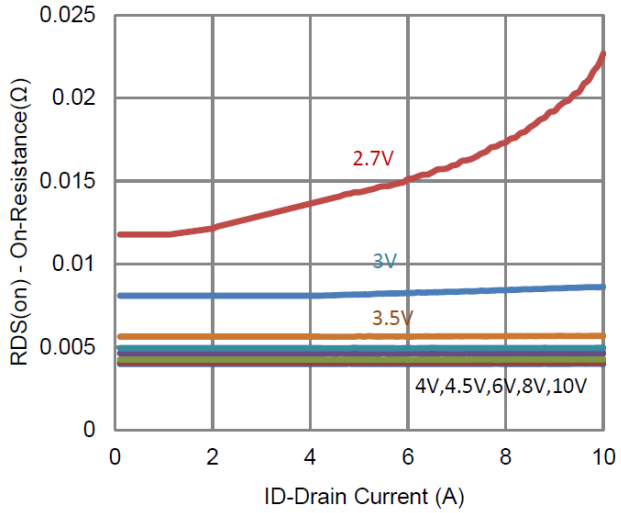
Notes:
1. The surface of the device is mounted on a 1" x 1" FR4 board.
2. Pulse width is limited by the maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

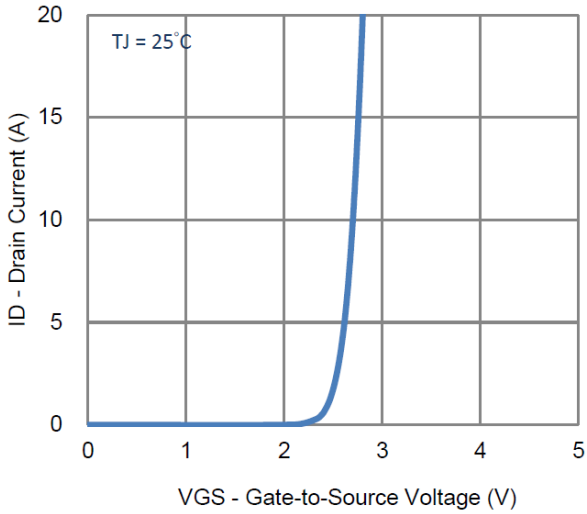
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=48V, V_{GS}=0
		-	-	10		V_{DS}=48V, V_{GS}=0, T_J=55℃
On-State Drain Current [1]	$I_{D(ON)}$	40	-	-	A	V_{DS}=5V, V_{GS}=10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	4.9	mΩ	V_{GS}=10V, I_D=10A
		-	-	5.5		V_{GS}=4.5V, I_D=8A
Forward Transconductance [1]	g_{FS}	-	11	-	S	V_{DS}=15V, I_D=10A
Diode Forward Voltage [1]	V_{SD}	-	0.73	-	V	I_S=3.7A, V_{GS}=0
Dynamic						
Total Gate Charge	Q_g	-	59	-	nC	V_{DS}=30V V_{GS}=4.5V I_D=10A
Gate-Source Charge	Q_{gs}	-	20	-		
Gate-Drain Charge	Q_{gd}	-	18	-		
Turn-On Delay Time	$T_{d(ON)}$	-	19	-	nS	V_{DS}=30V V_{GEN}=10V R_L=3Ω R_{GEN}=6Ω I_D=10A
Rise Time	T_r	-	19	-		
Turn-Off Delay Time	$T_{d(OFF)}$	-	166	-		
Fall Time	T_f	-	48	-		
Input Capacitance	C_{iss}	-	7283	-	pF	V_{DS}=15V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	477	-		
Reverse Transfer Capacitance	C_{rss}	-	293	-		

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

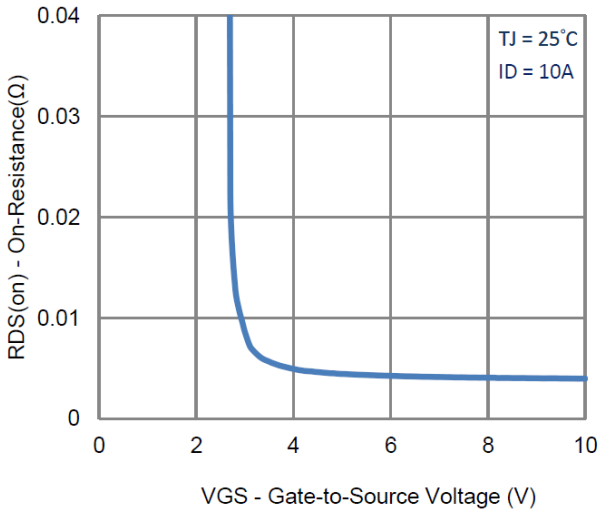
CHARACTERISTIC CURVES



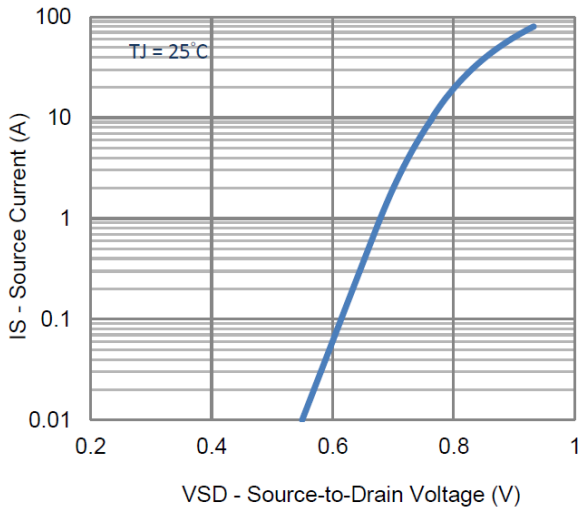
1. On-Resistance vs. Drain Current



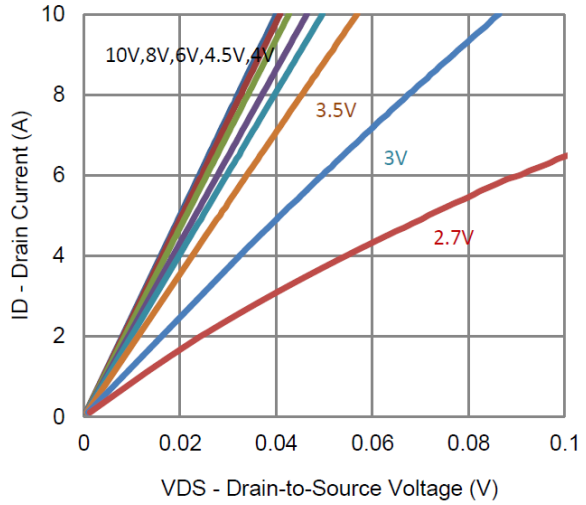
2. Transfer Characteristics



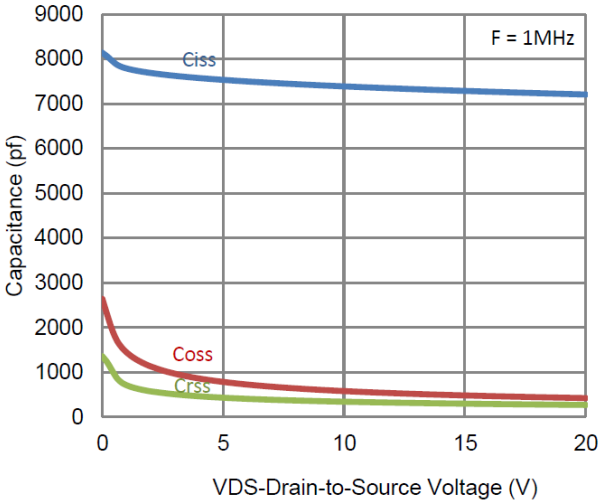
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

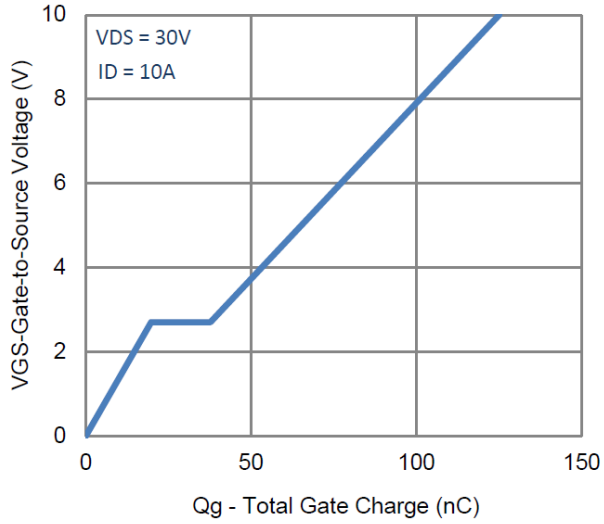


5. Output Characteristics

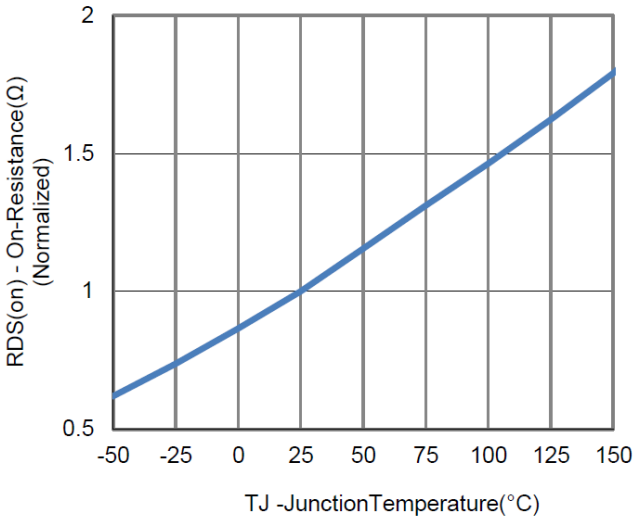


6. Capacitance

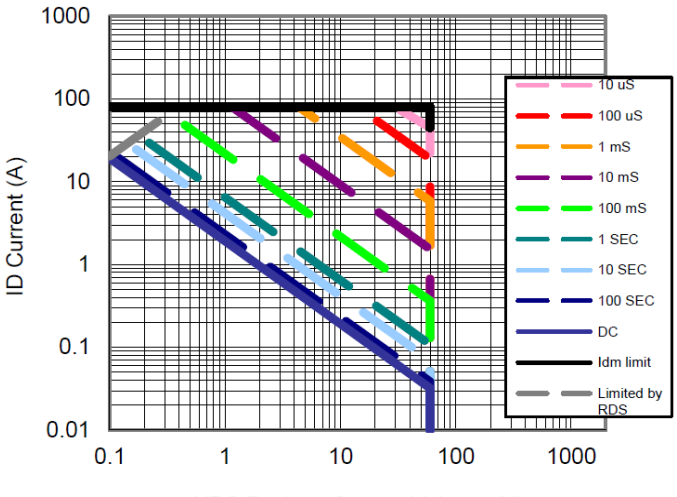
CHARACTERISTIC CURVES



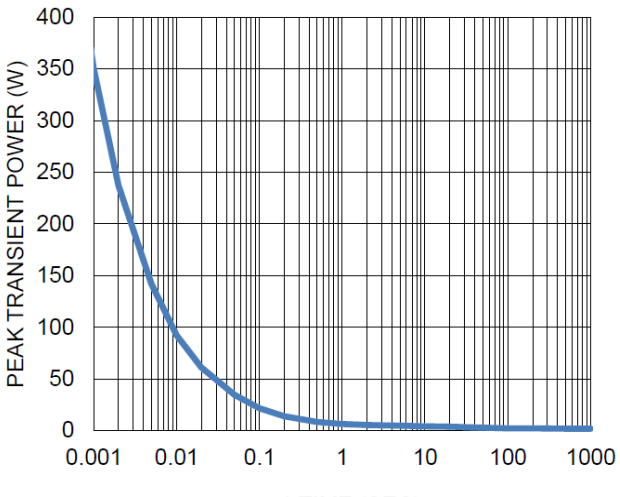
7. Gate Charge



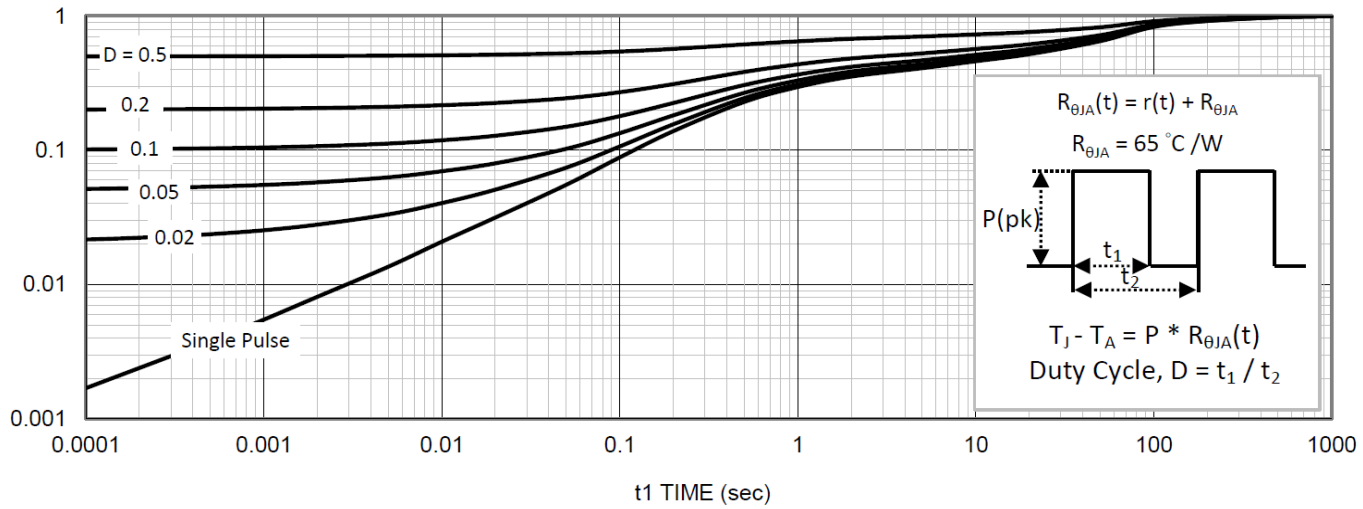
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient