Elektronische Bauelemente

SSP7444N

34A, 40V, $R_{DS(ON)}$ 3 mΩ
N-Channel Enhancement MOSFET

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

FEATURES

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

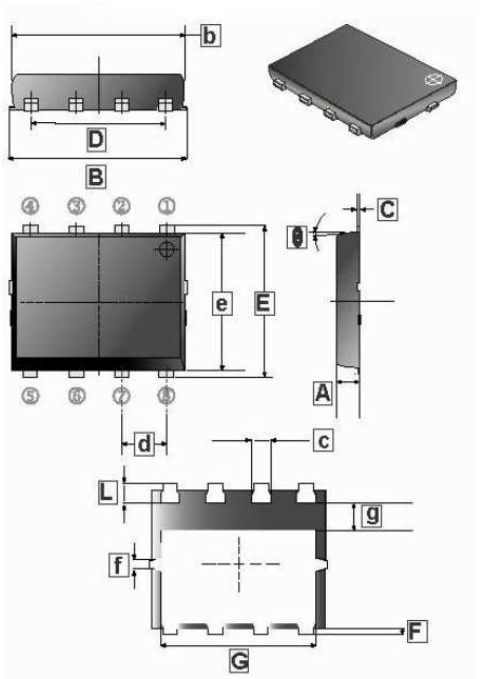
APPLICATIONS

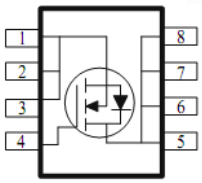
- White LED boost converters.
- Automotive Systems.
- Industrial DC/DC Conversion Circuits.

PACKAGE INFORMATION

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

SOP-8PP





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.85	1.00	θ	0°	10°
B	5.40	5.60	b	5.10	5.30
C	0.15	0.25	c	0.30	0.50
D	3.71	3.91	d	1.27BSC	
E	5.95	6.15	e	5.45	5.65
F	0.08	0.24	f	0.20	0.35
G	4.25	4.45	g	1.10	-

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25℃	I_D	34	A
	T_A=70℃		27	
Pulsed Drain Current [2]		I_{DM}	100	A
Continuous Source Current (Diode Conduction) [1]		I_S	8.1	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}	-55~150	℃
Thermal Resistance Data				
Maximum Junction to Ambient [1]	t≦10 sec	$R_{\theta JA}$	25	℃ / W
	Steady State		65	

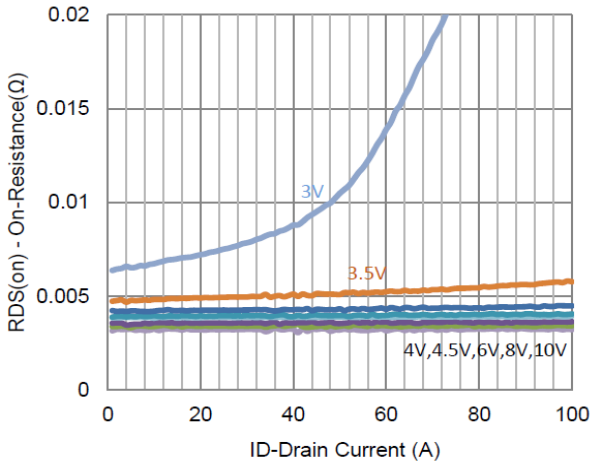
Notes:
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

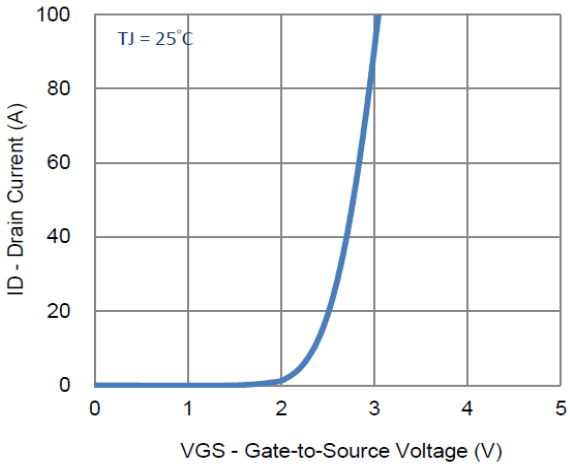
Parameter	Symbol	Min	Typ	Max	Unit	Test conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=32V, V_{GS}=0
		-	-	25		V_{DS}=32V, V_{GS}=0,T_J=55℃
On-State Drain Current [1]	$I_{D(ON)}$	40	-	-	A	V_{DS}=5V, V_{GS}=10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	3	mΩ	V_{GS}=10V, I_D=20A
		-	-	5		V_{GS}=4.5V, I_D=16A
Forward Transconductance [1]	g_{FS}	-	25	-	S	V_{DS}=15V,,I_D=20A
Diode Forward Voltage	V_{SD}	-	0.69	-	V	I_S=4.1A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	49	-	nC	I_D=20A V_{DS}=20V V_{GS}=4.5V
Gate-Source Charge	Q_{gs}	-	12	-		
Gate-Drain Charge	Q_{gd}	-	23	-		
Turn-On Delay Time	$Td_{(ON)}$	-	19	-	nS	I_D=20A, V_{DS}=20V V_{GEN}=10V R_L=1Ω, R_{GEN}=6Ω
Rise Time	T_r	-	35	-		
Turn-Off Delay Time	$Td_{(OFF)}$	-	209	-		
Fall Time	T_f	-	88	-		
Input Capacitance	C_{iss}	-	6861	-	pF	V_{DS}=15V, V_{GS}=0, f=1MHz
Output Capacitance	C_{oss}	-	791	-		
Reverse Transfer Capacitance	C_{rss}	-	653	-		

Notes:
1. Pulse test：PW ≦ 300 us duty cycle ≦ 2%.
2. Guaranteed by design, not subject to production testing.

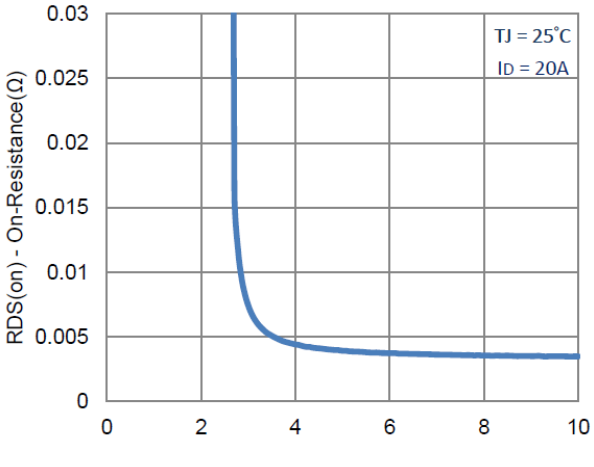
ELECTRICAL CHARACTERISTICS CURVE



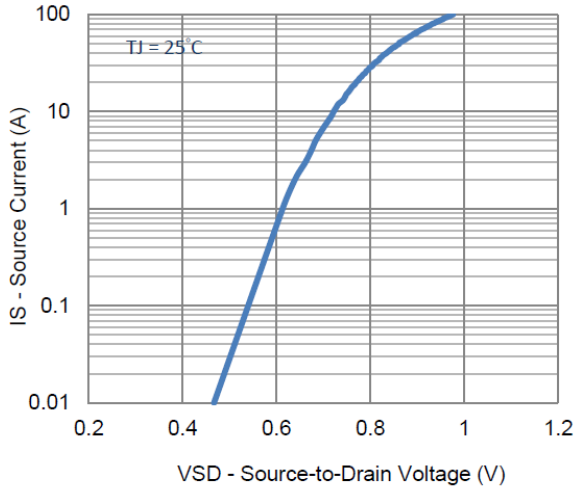
1. On-Resistance vs. Drain Current



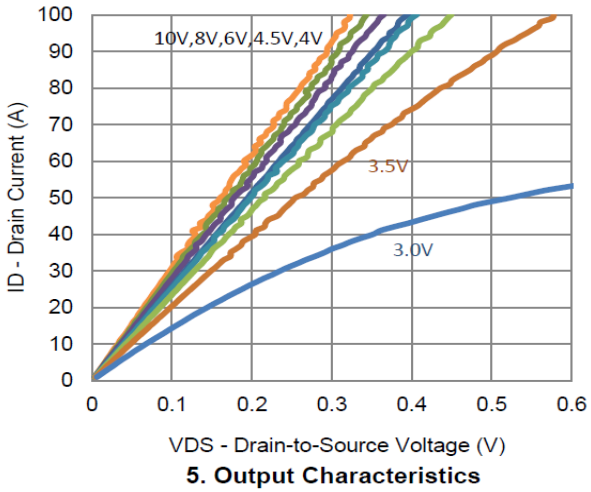
2. Transfer Characteristics



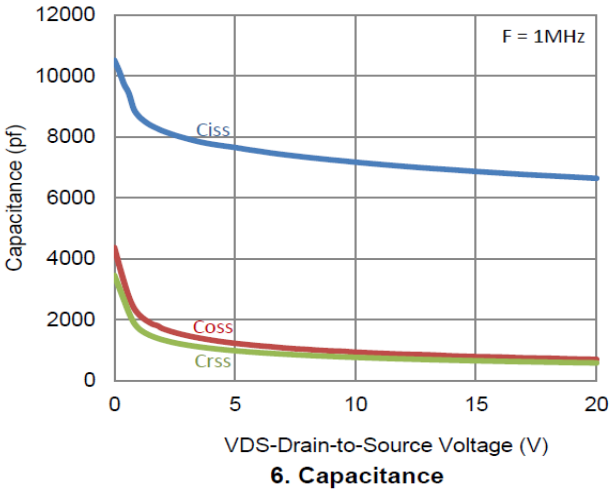
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

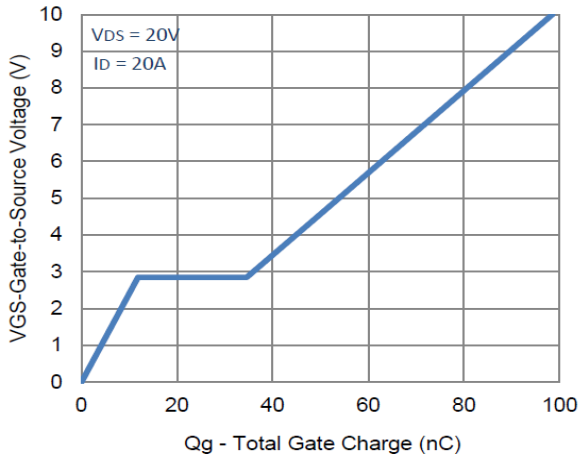


5. Output Characteristics

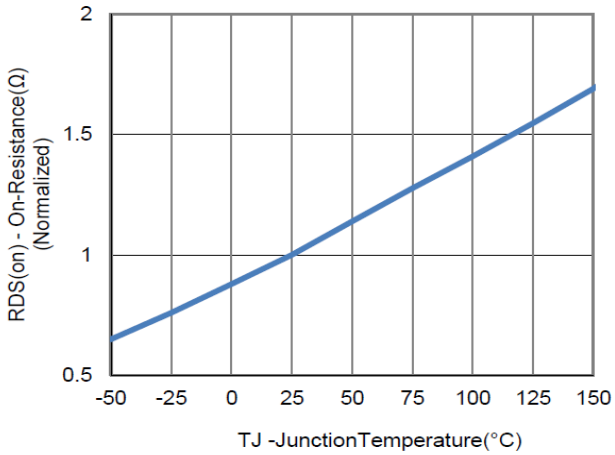


6. Capacitance

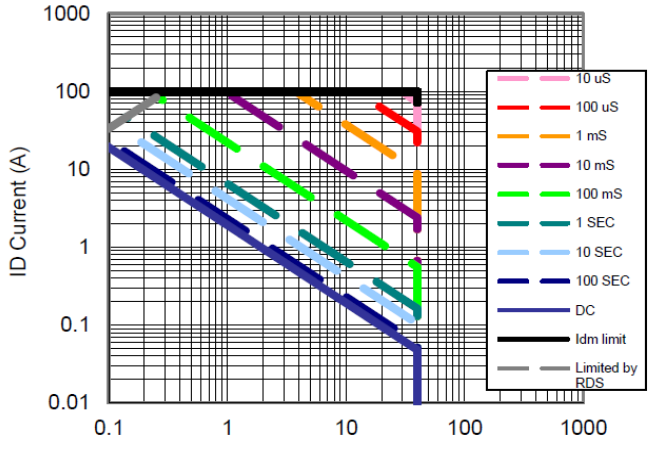
ELECTRICAL CHARACTERISTICS CURVE



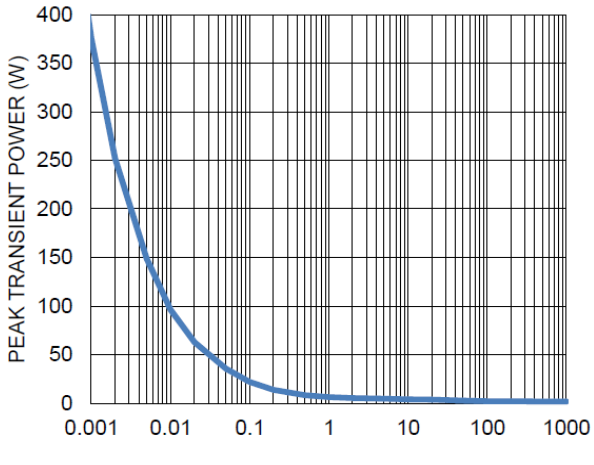
7. Gate Charge



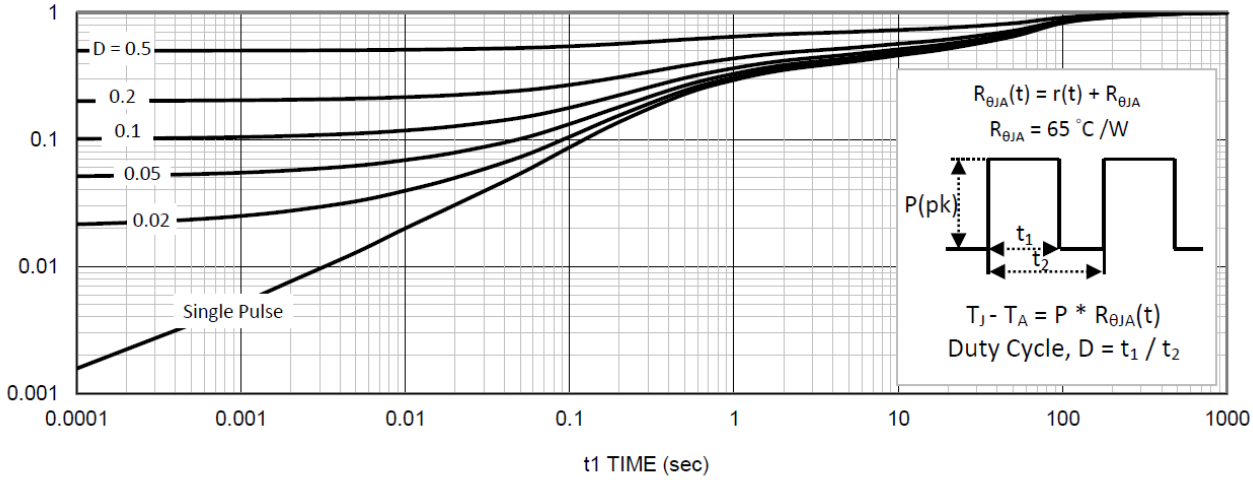
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient