Elektronische Bauelemente

STT3434N

6.5A, 30V, $R_{DS(ON)}$ 32 mΩ
N-Channel Enhancement Mode MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen and 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.

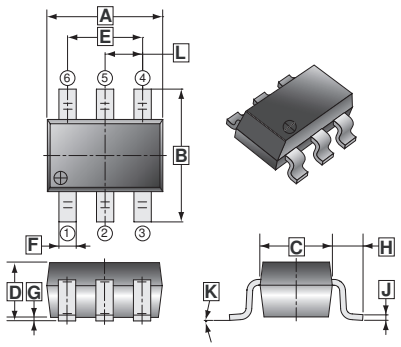
FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper lead frame TSOP-6 saves board space.
- Fast switching speed
- High performance trench technology

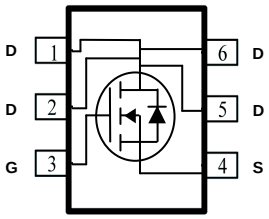
PACKAGE INFORMATION

Package	MPQ	Leader Size
TSOP-6	3K	7 inch

TSOP-6



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	0	0.10
B	2.60	3.00	H	0.60 REF.	
C	1.40	1.80	J	0.12 REF.	
D	1.10 MAX.		K	0°	10°
E	1.90 REF.		L	0.95 REF.	
F	0.30	0.50			



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1]	T_A= 25℃	I_D	6.5	A
	T_A= 70℃		5.3	
Pulsed Drain Current [2]		I_{DM}	25	A
Continuous Source Current (Diode Conduction) [1]		I_S	2.9	A
Power Dissipation [1]	T_A= 25℃	P_D	2	W
	T_A= 70°C		1.3	
Operating Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Maximum Thermal Resistance from Junction to Ambient [1]	t≦10 sec	$R_{\theta JA}$	62.5	°C / W
	Steady State		110	
Maximum Thermal Resistance from Junction to Case [1]		$R_{\theta JC}$	70	

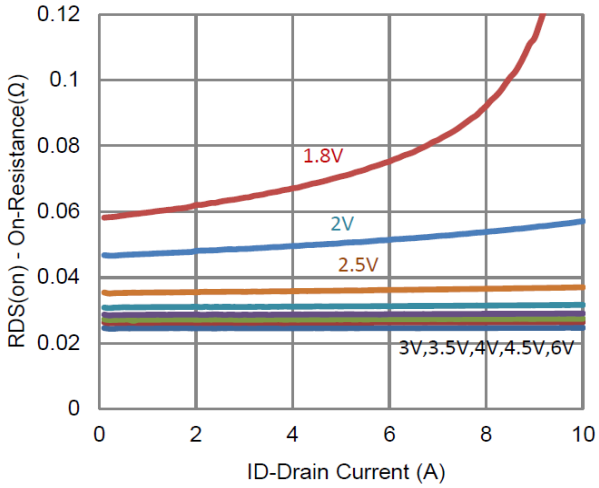
Notes:
1. The surface of the device is mounted on a 1" x 1" FR4 Board.
2. The pulse width is limited by the maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

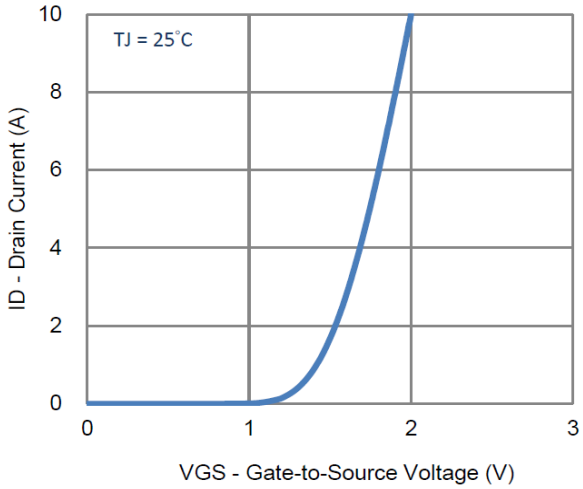
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Static Characteristics						
Gate-Threshold Voltage	$V_{GS(th)}$	0.4	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0V, V_{GS}= ±12V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=24V, V_{GS}=0
		-	-	10		V_{DS}=24V, V_{GS}=0, T_J=55°C
On-State Drain Current [1]	$I_{D(on)}$	9	-	-	A	V_{DS}=5V, V_{GS}=4.5V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	32	mΩ	V_{GS}=4.5V, I_D=2A
		-	-	40		V_{GS}=2.5V, I_D=1.6A
Forward Transconductance [1]	g_{fs}	-	8	-	S	V_{DS}=15V, I_D=2A
Diode Forward Voltage [1]	V_{SD}	-	0.67	-	V	I_S=1.5A, V_{GS}=0
Dynamic Characteristics						
Total Gate Charge	Q_g	-	9	-	nC	V_{DS}=15V V_{GS}=4.5V I_D=2A
Gate-Source Charge	Q_{gs}	-	1.7	-		
Gate-Drain Charge	Q_{gd}	-	3	-		
Turn-on Delay Time	$T_{d(on)}$	-	10	-	nS	V_{DS}=15V V_{GEN}=4.5V R_L=7.5Ω R_{GEN}=6Ω I_D=2A
Rise Time	T_r	-	17	-		
Turn-off Delay Time	$T_{d(off)}$	-	40	-		
Fall Time	T_f	-	11	-		
Input Capacitance	C_{iss}	-	640	-	pF	V_{GS}=0 V_{DS}=15V f=1MHz
Output Capacitance	C_{oss}	-	52	-		
Reverse Transfer Capacitance	C_{rss}	-	46	-		

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

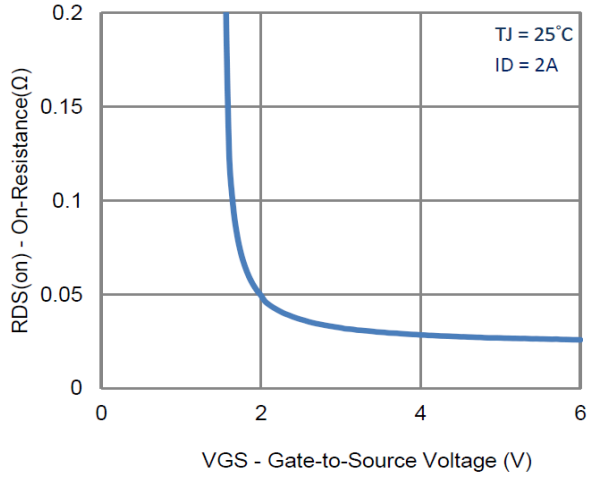
CHARACTERISTICS CURVE



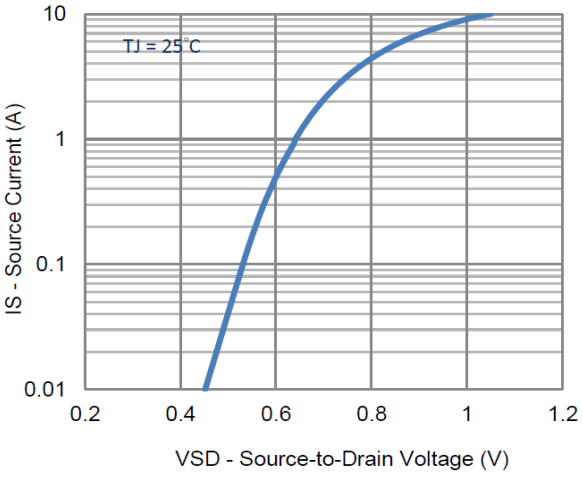
1. On-Resistance vs. Drain Current



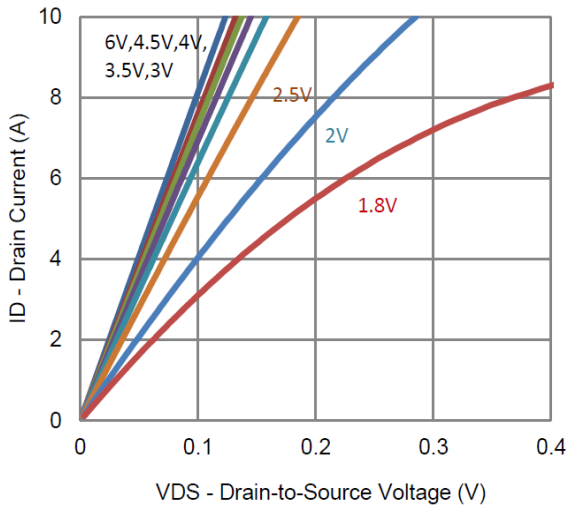
2. Transfer Characteristics



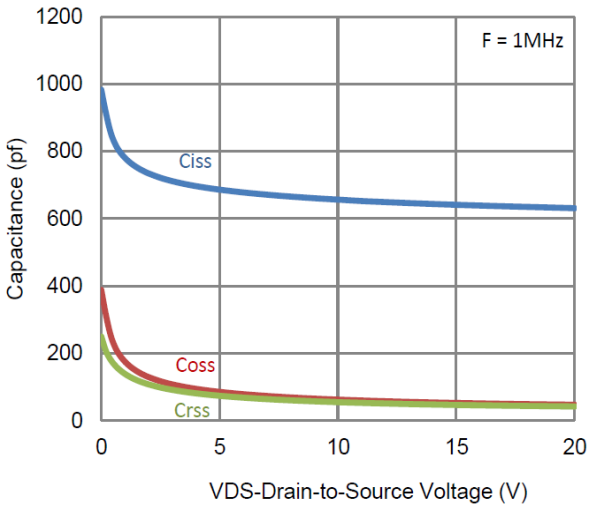
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

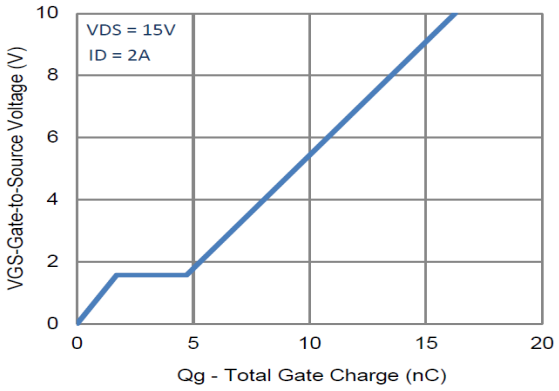


5. Output Characteristics

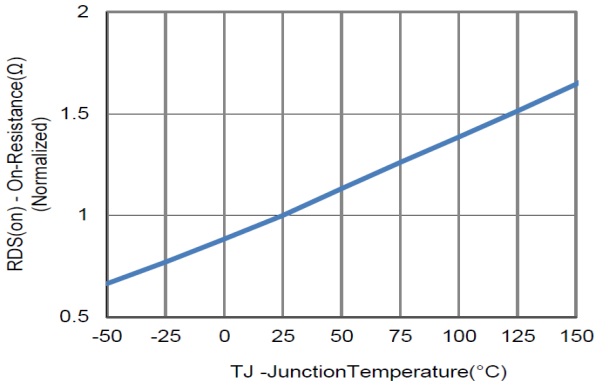


6. Capacitance

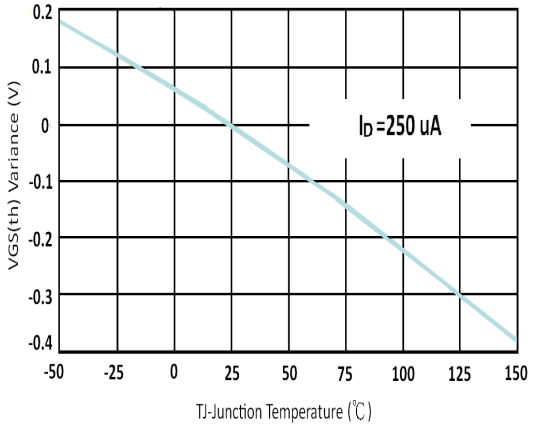
CHARACTERISTICS CURVE



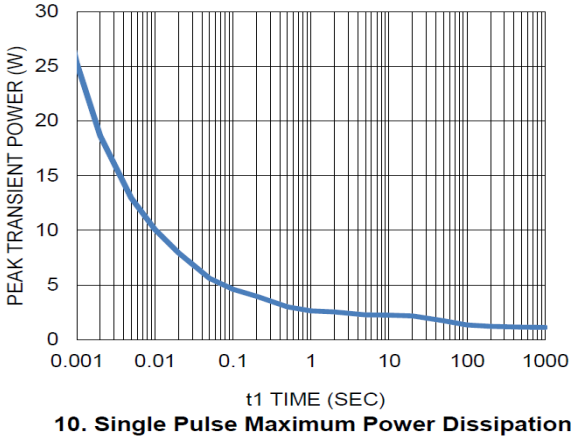
7. Gate Charge



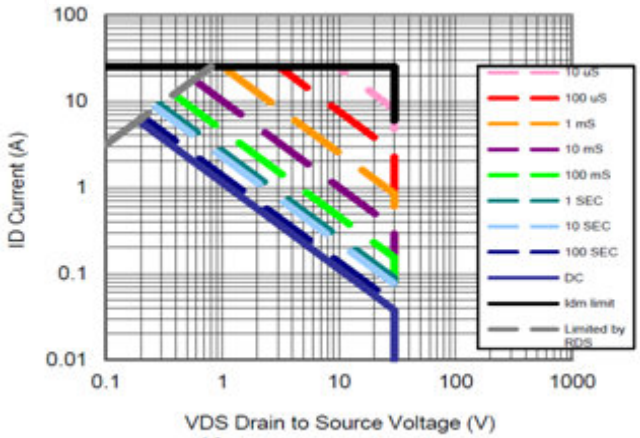
8. Normalized On-Resistance Vs Junction Temperature



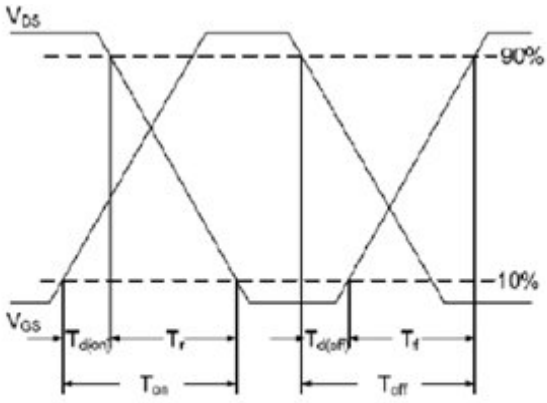
9. VGS(th) Variance vs. TJ



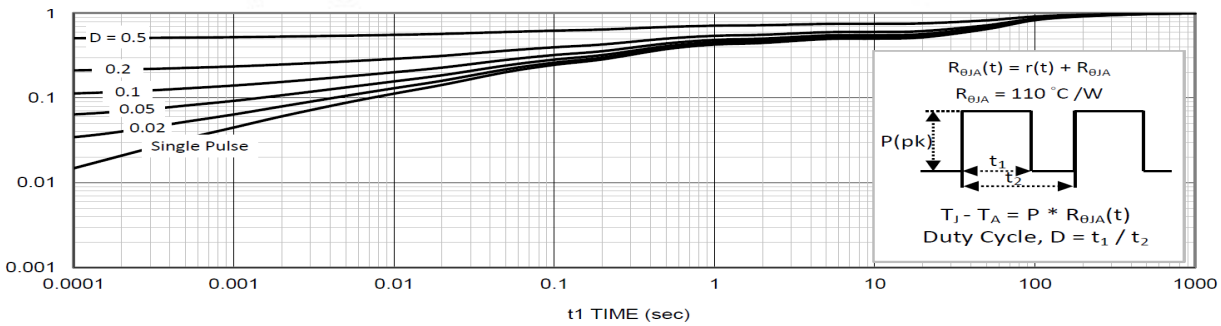
10. Single Pulse Maximum Power Dissipation



11. Safe Operating Area



12. Switching Time Waveform



13. Normalized Thermal Transient Junction to Ambient