Elektronische Bauelemente

STT3458N

3.4A , 60V , $R_{DS(ON)}$ 92 mΩ
N-Channel Enhancement Mode Mos.FET

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

DESCRIPTION

These miniature surface mount MOSFETs utilize High Cell Density process. Low $R_{DS(on)}$ assures minimal power loss and conserves energy, making this device ideal for use in power management circuitry.

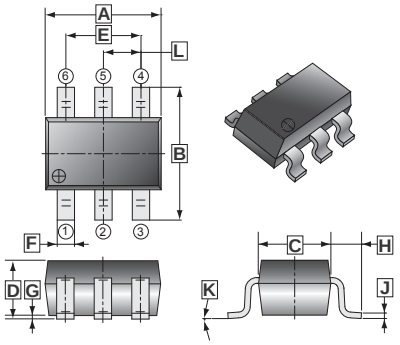
FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low gate charge
- Fast switch
- Miniature TSOP-6 surface mount package saves board space

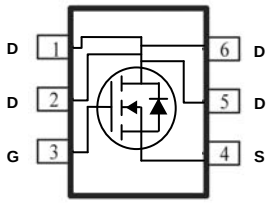
APPLICATION

Power switch, power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

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			



PACKAGE INFORMATION

Package	MPQ	Leader Size
TSOP-6	3K	7 inch

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A= 25°C	I_D	3.4	A
	T_A= 70°C		2.7	
Pulsed Drain Current [2]		I_{DM}	20	A
Continuous Source Current (Diode Conduction) [1]		I_S	2.5	A
Power Dissipation [1]	T_A= 25°C	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 Junction to Ambient [1]	t≦10 sec	$R_{\theta JA}$	62.5	°C / W
	Steady State		110	

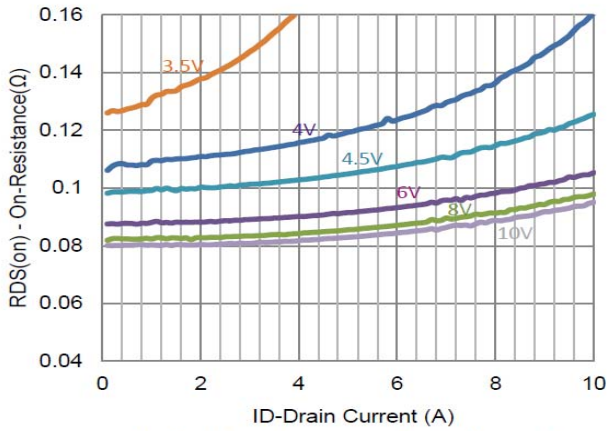
Notes
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

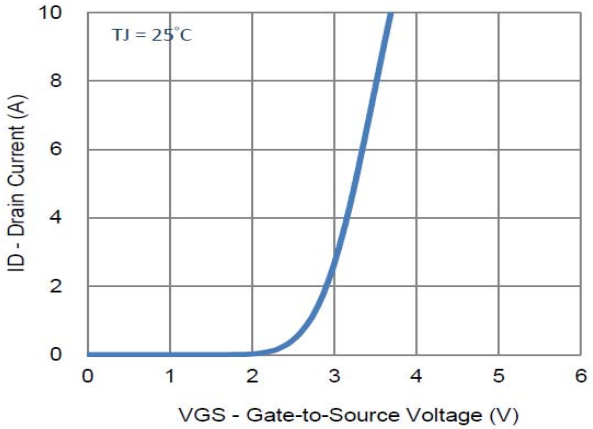
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=48V, V_{GS}=0
		-	-	25		V_{DS}=48V, V_{GS}=0, T_J= 55°C
On-State Drain Current [1]	$I_{D(on)}$	10	-	-	A	V_{DS} =5V, V_{GS}=10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	92	mΩ	V_{GS}=10V, I_D=2.7A
		-	-	107		V_{GS}=4.5V, I_D=2.5A
Forward Transconductance [1]	g_{fs}	-	8	-	S	V_{DS}=15V, I_D=2.7A
Diode Forward Voltage	V_{SD}	-	0.81	-	V	I_S=1.3A, V_{GS}=0
Dynamic [2]						
Input Capacitance	C_{iss}	-	297	-	pF	V_{DS}=15V, V_{GS}=0, f=1MHz
Output Capacitance	C_{oss}	-	40	-		
Reverse Transfer Capacitance	C_{rss}	-	28	-		
Total Gate Charge	Q_g	-	4	-	nC	V_{DS}=30V, V_{GS}=4.5V, I_D=2.7A
Gate-Source Charge	Q_{gs}	-	1.2	-		
Gate-Drain Charge	Q_{gd}	-	2.1	-		
Turn-on Delay Time	$T_{d(on)}$	-	4	-	nS	V_{DS}=30V, V_{GEN}=10V, R_L=11.2Ω, I_D=2.7A, R_{GEN}=6Ω
Rise Time	T_r	-	6	-		
Turn-off Delay Time	$T_{d(off)}$	-	17	-		
Fall Time	T_f	-	5	-		

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

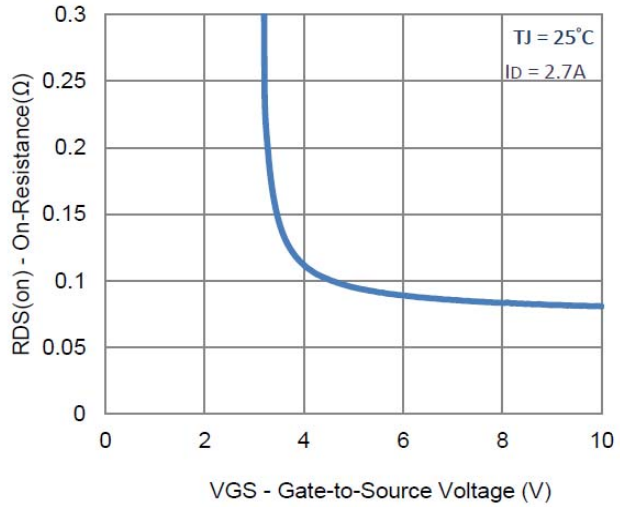
CHARACTERISTIC CURVES



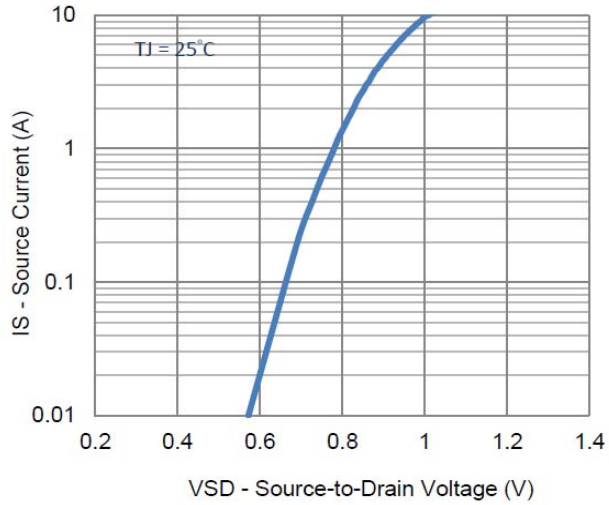
1. On-Resistance vs. Drain Current



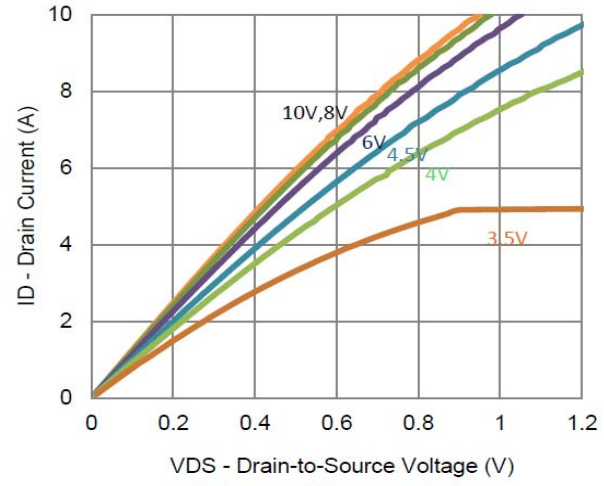
2. Transfer Characteristics



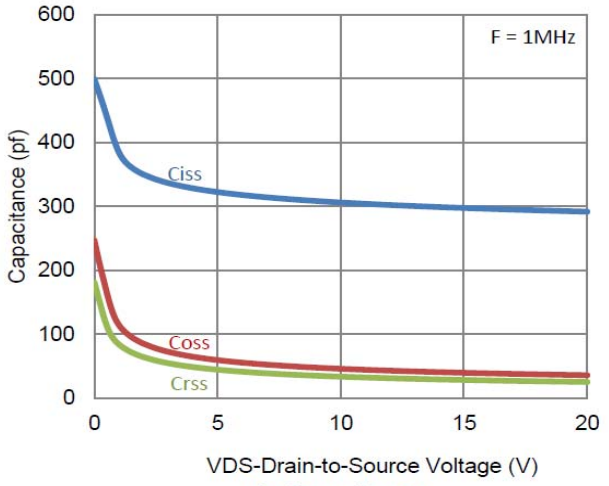
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

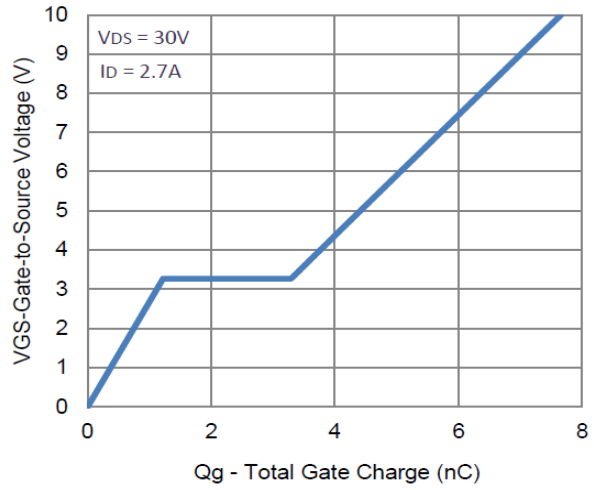


5. Output Characteristics

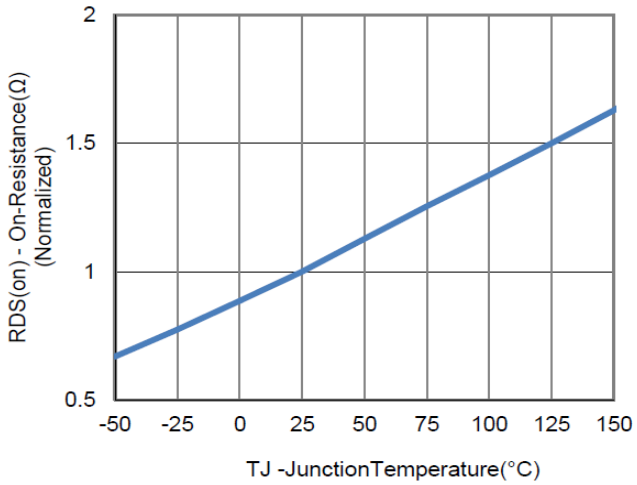


6. Capacitance

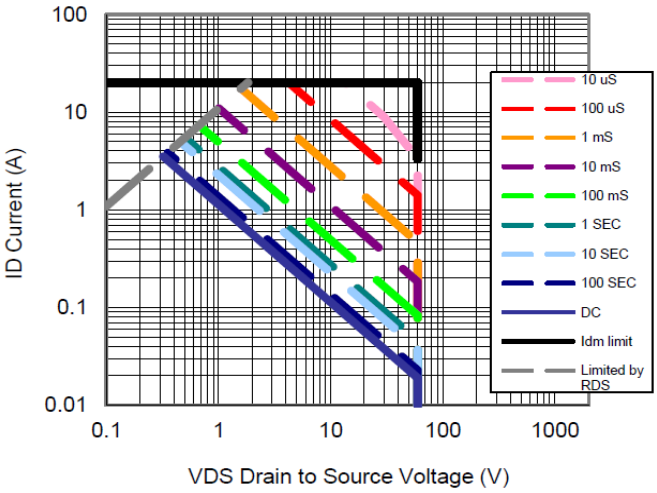
CHARACTERISTIC CURVES



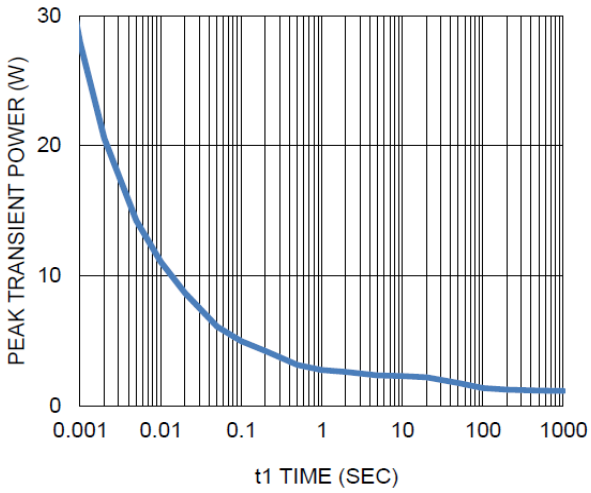
7. Gate Charge



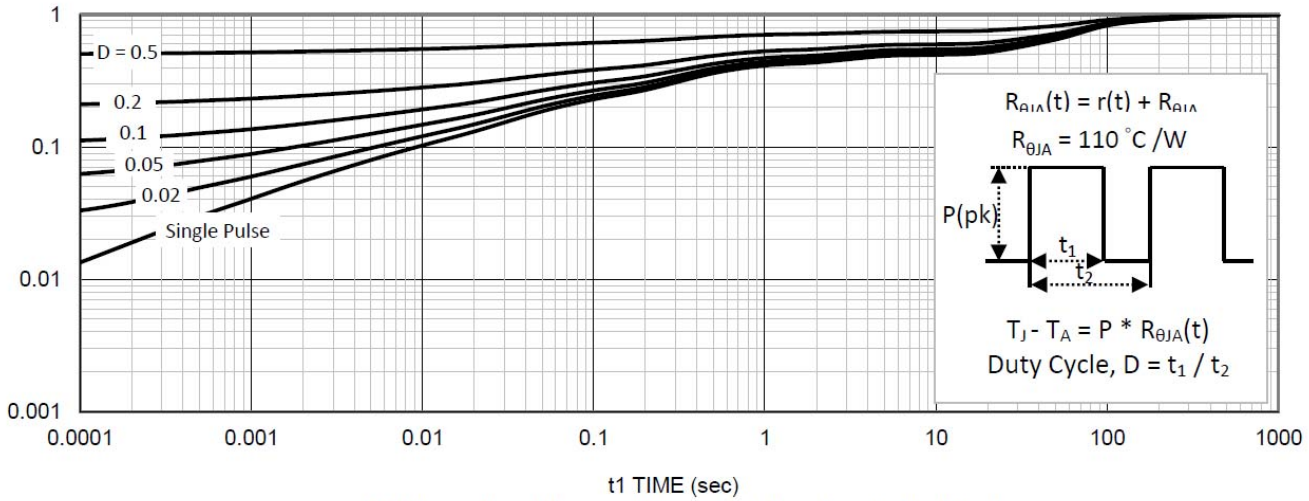
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient