Elektronische Bauelemente

STT3490N

N-Channel Enhancement Mode Mos.FET

1.2 A, 150 V, $R_{DS(ON)}$ 700 mΩ

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

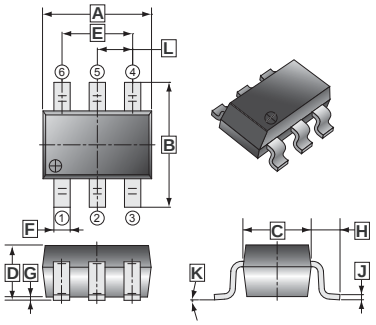
KEY FEATURES

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

TYPICAL APPLICATIONS

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

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			

PRODUCT SUMMARY

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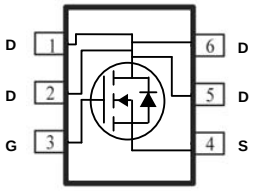
V_{DS}(V)	R_{DS}(on) (mΩ)	I_D(A)
150	700@V_{GS}= 10V	1.2
	1200@V_{GS}= 4.5V	1



ABSOLUTE MAXIMUM RATINGS(T_A=25°C UNLESS OTHERWISE NOTED)

Parameter		Symbol	Ratings	Unit
			Maximum	
Drain-Source Voltage		V_{DS}	150	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [a]	T_A= 25°C	I_D	1.2	A
	T_A= 70°C		1	
Pulsed Drain Current [b]		I_{DM}	±10	A
Continuous Source Current (Diode Conduction) [a]		I_S	2.5	A
Power Dissipation [a]	T_A= 25°C	P_D	2	W
	T_A= 70°C		1.3	
Operating Junction and Storage Temperature Range		Tj, Tstg	-55 ~ 150	°C

THERMAL RESISTANCE RATINGS				
Parameter		Symbol	Maximum	Unit
Maximum Junction to Ambient [a]	t ≦ 10 sec	$R_{\theta JA}$	62.5	°C / W
	Steady State		110	

Notes

a. Surface Mounted on 1" x 1" FR4 Board.

b. Pulse width limited by maximum junction temperature.

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

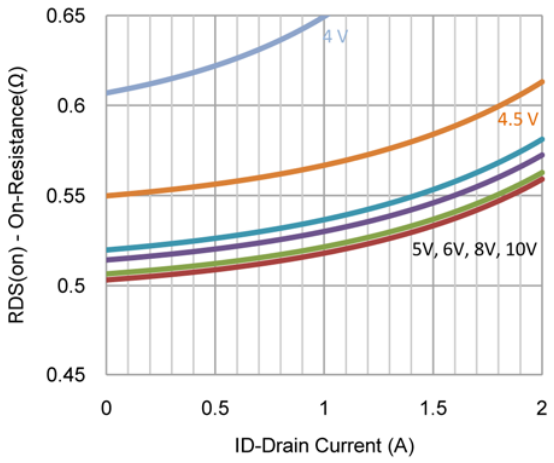
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	3.5	V	V_{DS}=V_{GS}, I_D= 250uA
Gate-Body Leakage	I_{GSS}	-	-	±100	uA	V_{DS}= 0V, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	uA	V_{DS}= 120V, V_{GS}= 0V
		-	-	10		V_{DS}= 120V, V_{GS}= 0V, T_J= 55°C
On-State Drain Current [a]	$I_{D(on)}$	10	-	-	A	V_{DS} = 5V, V_{GS}= 10V
Drain-Source On-Resistance [a]	$R_{DS(ON)}$	-	-	700	mΩ	V_{GS}= 10V, I_D= 1.2A
		-	-	1200		V_{GS}= 4.5V, I_D= 1A
Forward Transconductance [a]	g_{fs}	-	11	-	S	V_{DS}= 15V, I_D= 1.2A
Diode Forward Voltage [a]	V_{SD}	-	0.8	-	V	I_S= 1.25A, V_{GS}= 0V
DYNAMIC [b]						
Total Gate Charge	Q_g	-	2.5	-	nC	V_{DS}= 10V, V_{GS}= 4.5V, I_D= 1A
Gate-Source Charge	Q_{gs}	-	1	-		
Gate-Drain Charge	Q_{gd}	-	0.8	-		
Turn-on Delay Time	$T_{d(on)}$	-	5	-	nS	V_{DD}= 10V, V_{GEN}= 10V, R_L= 10Ω, I_D= 1A, R_{GEN}= 6Ω
Rise Time	T_r	-	5	-		
Turn-off Delay Time	$T_{d(off)}$	-	6	-		
Fall Time	T_f	-	4	-		
Input Capacitance	C_{iss}	-	320	-	pF	V_{DS}= 15V, V_{GS}= 0V, f= 1MHz
Output Capacitance	C_{oss}	-	37	-		
Reverse Transfer Capacitance	C_{rss}	-	20	-		

Notes

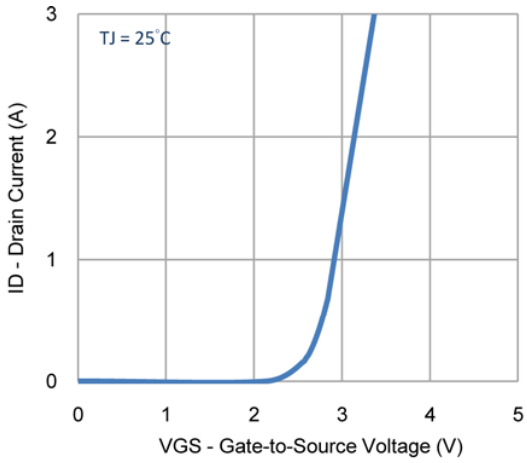
a. Pulse test：PW ≦ 300 us duty cycle ≦ 2%.

b. Guaranteed by design, not subject to production testing.

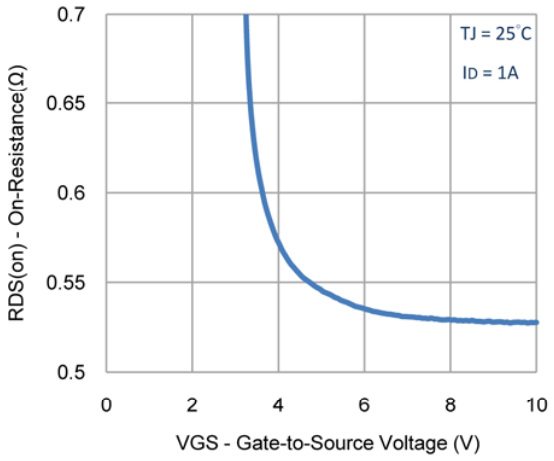
CHARACTERISTIC CURVES



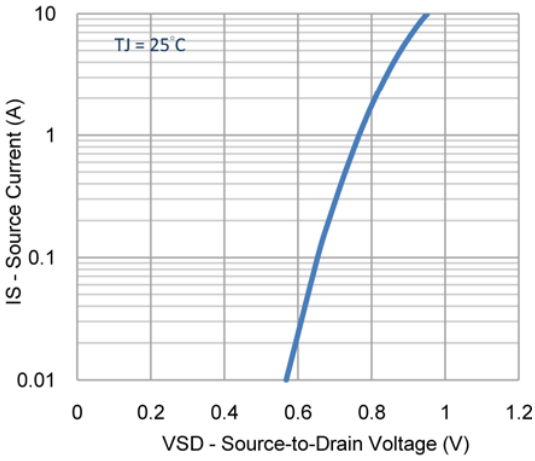
1. On-Resistance vs. Drain Current



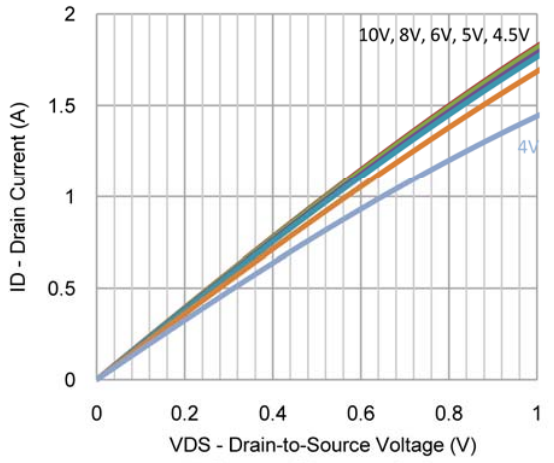
2. Transfer Characteristics



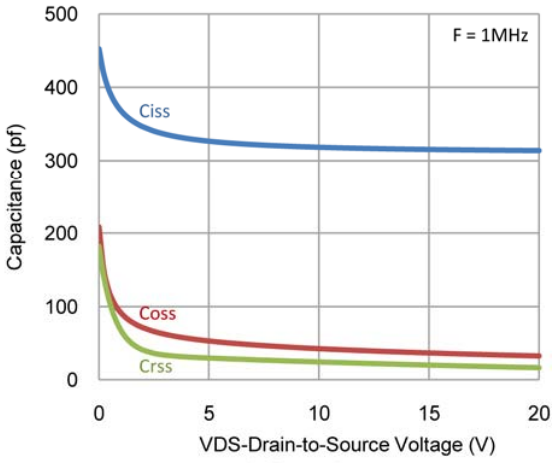
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

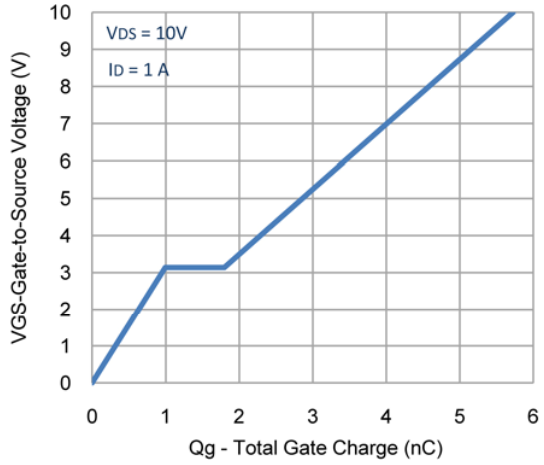


5. Output Characteristics

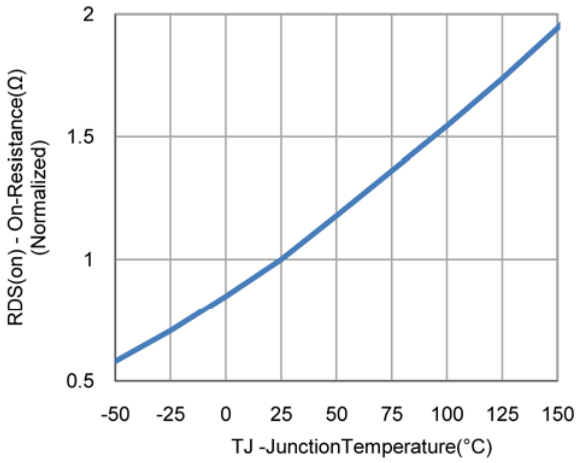


6. Capacitance

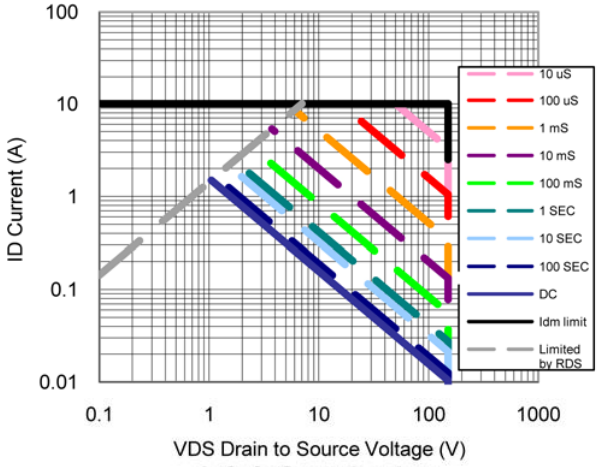
CHARACTERISTIC CURVES



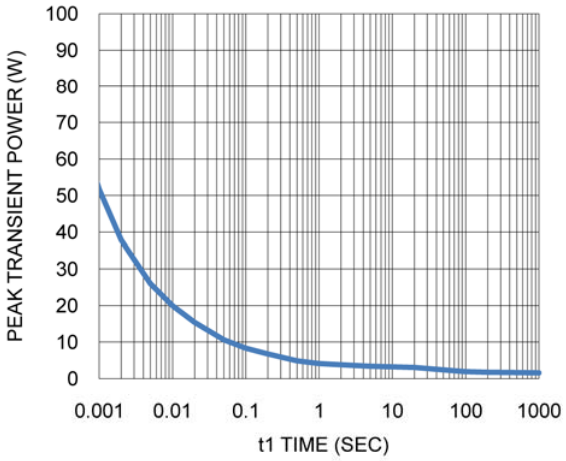
7. Gate Charge



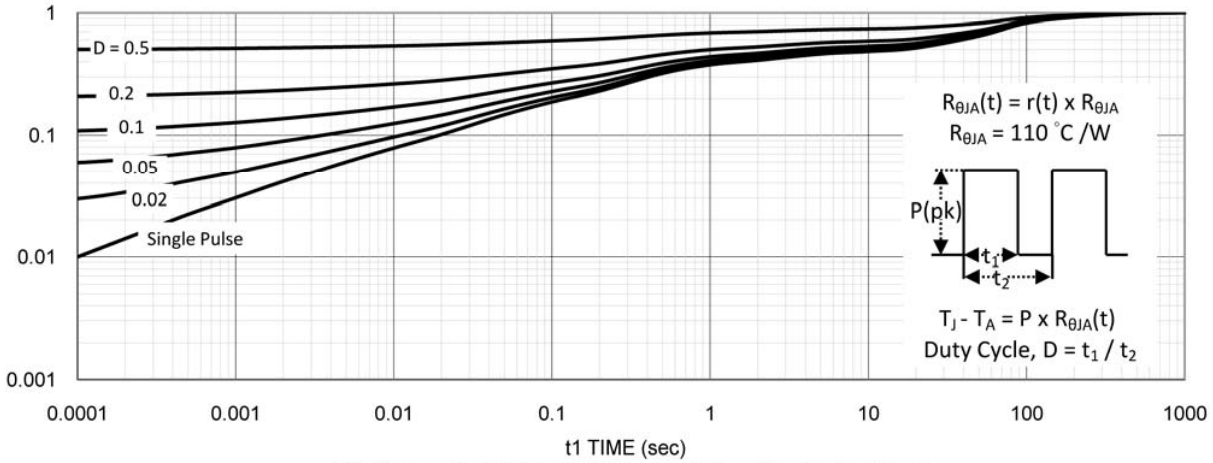
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient