Elektronische Bauelemente

SSD40N10-30D

26A, 100V, $R_{DS(ON)}$ 36mΩ
N-Ch Enhancement Mode Power MOSFET

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

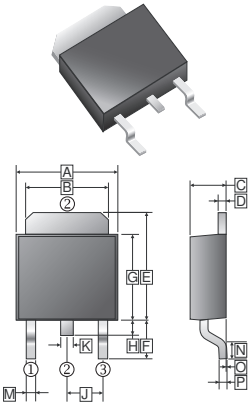
FEATURES

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

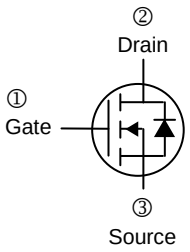
APPLICATION

- PoE Power Sourcing Equipment.
- PoE Powered Devices.
- Telecom DC/DC converters.
- White LED boost converters.

TO-252(D-Pack)



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.4	6.8	J	2.30 REF.	
B	5.20	5.50	K	0.70	0.90
C	2.20	2.40	M	0.50	1.1
D	0.45	0.58	N	0.9	1.6
E	6.8	7.3	O	0	0.15
F	2.40	3.0	P	0.43	0.58
G	5.40	6.2			
H	0.8	1.20			



PACKAGE INFORMATION

Package	MPQ	Leader Size
TO-252	2.5K	13' inch

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current @T_C=25℃ [1]	I_D	26	A
Pulsed Drain Current [2]	I_{DM}	50	A
Continuous Source Current (Diode Conduction) [1]	I_S	50	A
Total Power Dissipation @T_C=25℃ [1]	P_D	50	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 ~ 175	℃
Thermal Resistance Rating			
Maximum Thermal Resistance Junction-Ambient [1]	$R_{\theta JA}$	50	℃ / W
Maximum Thermal Resistance Junction-Case	$R_{\theta JC}$	3.0	℃ / W

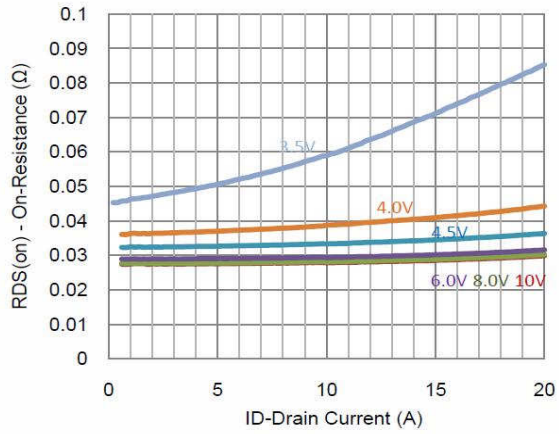
Notes：
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

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

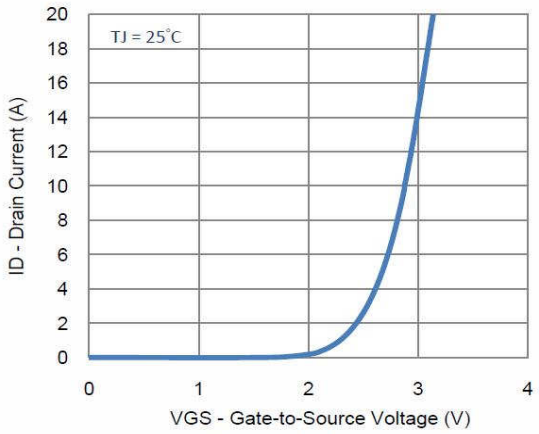
Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	1.0	-	3.5	V	V_{DS}=V_{GS}, I_D = 250μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}=20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=80V, V_{GS}=0
		-	-	25		V_{DS}=80V, V_{GS}=0, T_J=55℃
On-State Drain Current [1]	$I_{D(on)}$	34	-	-	A	V_{DS}=5V, V_{GS}=10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	36	mΩ	V_{GS}=10V, I_D=10 A
		-	-	42		V_{GS}=4.5V, I_D=9.2 A
Forward Transconductance [1]	g_{fs}	-	10	-	S	V_{DS}=15V, I_D=10 A
Diode Forward Voltage	V_{SD}	-	0.89	-	V	I_S=25A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	14.8	-	nC	V_{DS}=50V V_{GS}=4.5V I_D=10 A
Gate-Source Charge	Q_{gs}	-	4.3	-		
Gate-Drain Charge	Q_{gd}	-	8.6	-		
Turn-on Delay Time	$T_{d(on)}$	-	4.8	-	nS	V_{DD}= 50V R_L=5Ω I_D=10 A V_{GEN}=10V RGEN=6Ω
Rise Time	T_r	-	14.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	39.2	-		
Fall Time	T_f	-	25.6	-		
Input Capacitance	C_{iss}		1216		pF	V_{DS}=15V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}		154			
Reverse Transfer Capacitance	C_{rss}	-	131	-		

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

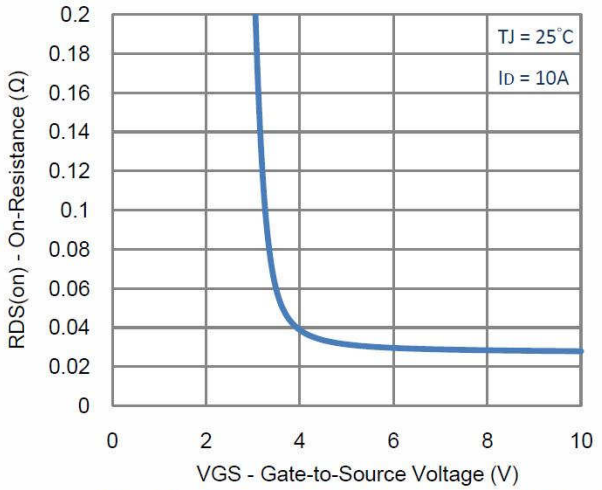
CHARACTERISTIC CURVES



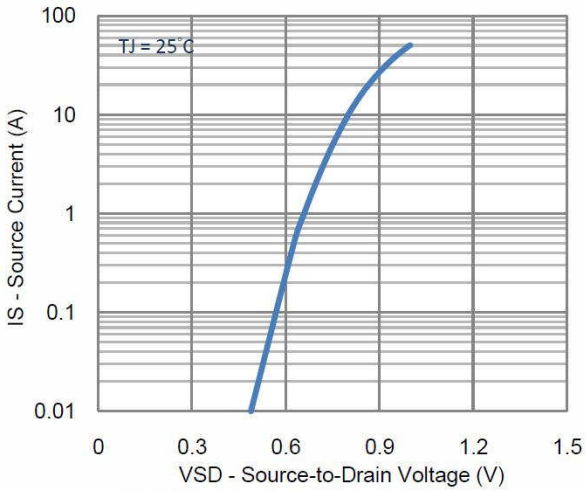
1. On-Resistance vs. Drain Current



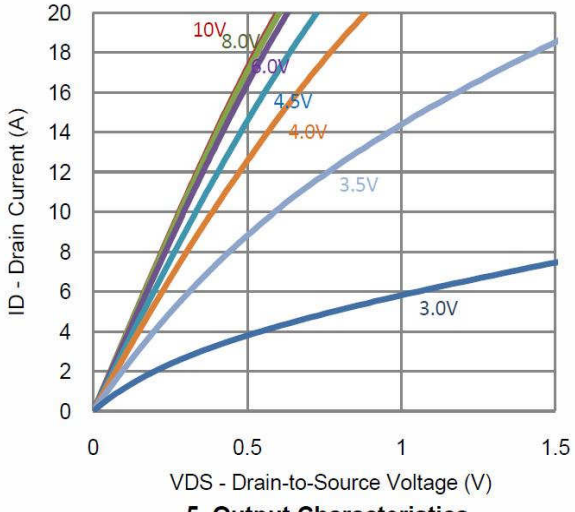
2. Transfer Characteristics



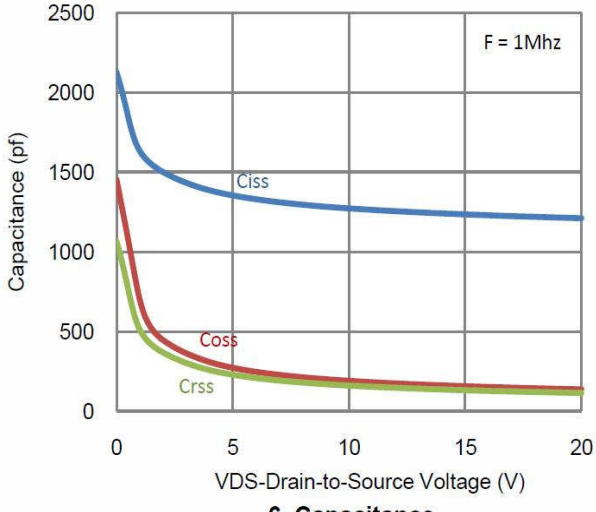
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage



5. Output Characteristics



6. Capacitance

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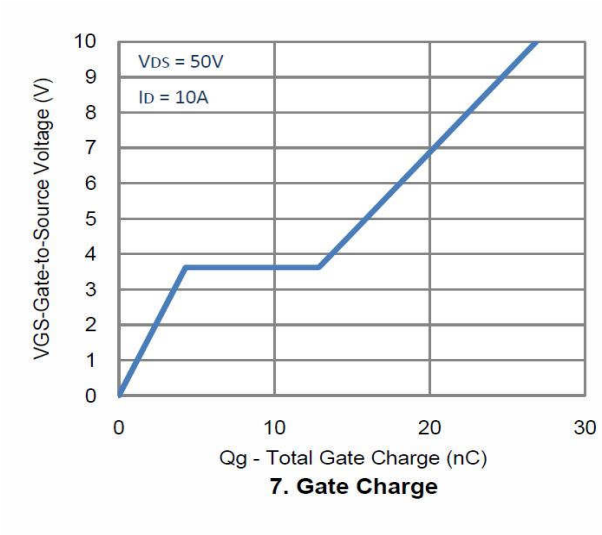
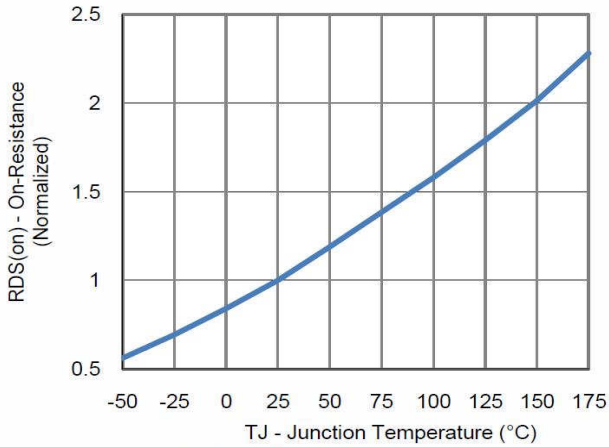
lividually.

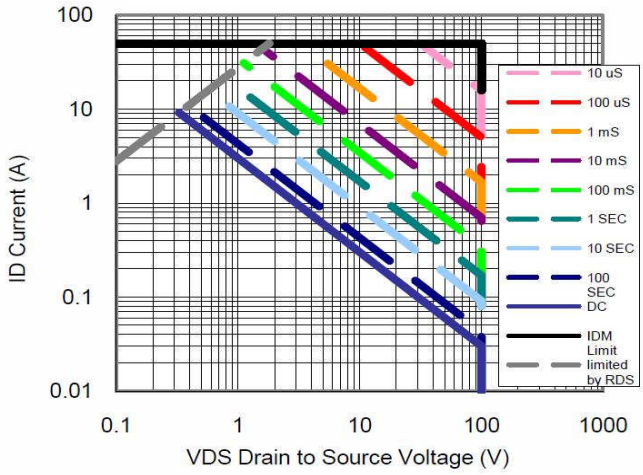
CHARACTERISTIC CURVES



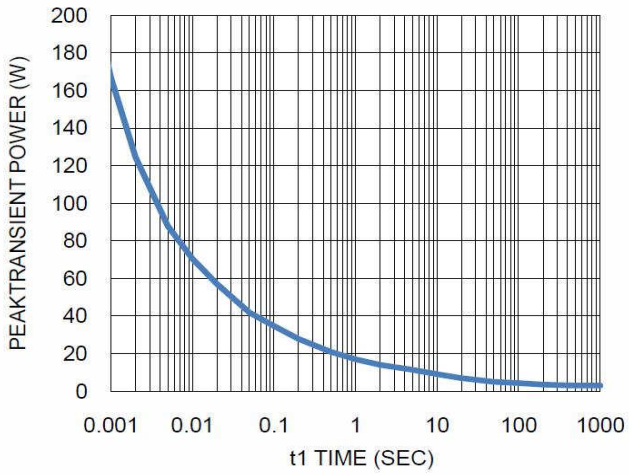
7. Gate Charge



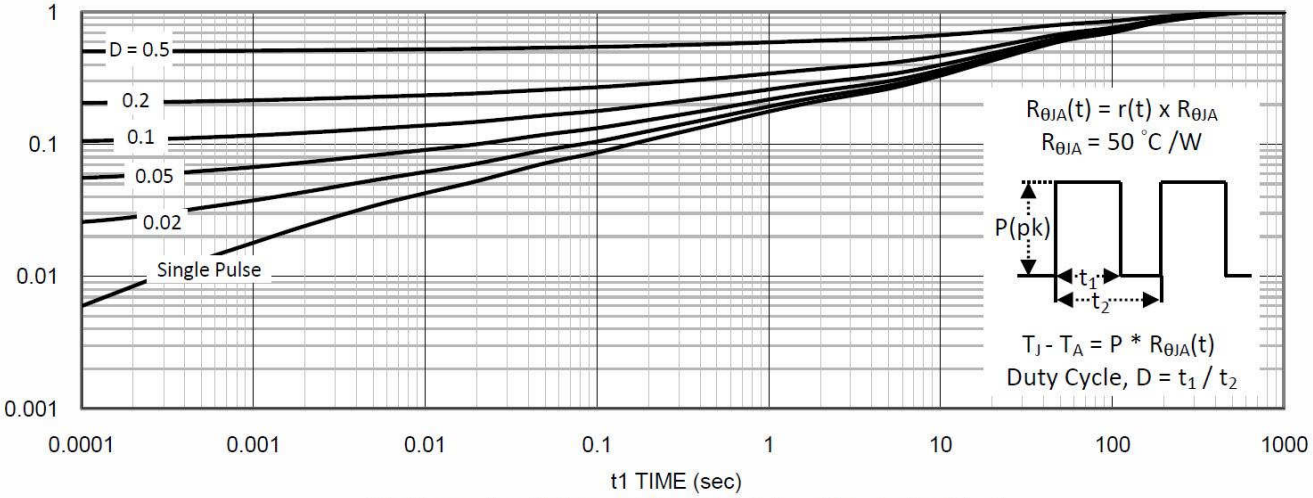
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient