Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	3.8mΩ@10V	15A
	5.8mΩ@4.5V	

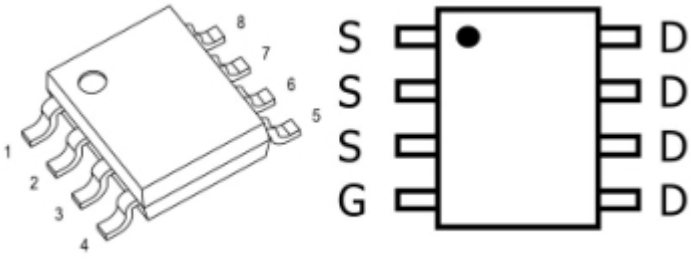
Feature

- V_{DS} =30V,I_D =15A
- $R_{DS(ON)}$ =3.8mΩ (typical) @ V_{GS}=10V

$R_{DS(ON)}$ =5.8mΩ (typical) @ V_{GS}=4.5V

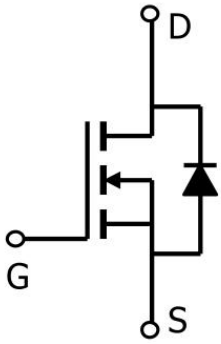
- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation
- Special process technology for high ESD capability

Package

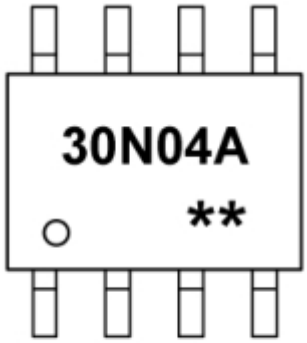


SOP-8L

Circuit diagram



Marking



30N04A : Product code
** : Week code.

Absolute maximum ratings

(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	±20	V
Drain Current-Continuous	I_D	15	A
Pulsed Drain Current	I_{DM}	60	A
Maximum Power Dissipation	P_D	3	W
Thermal Resistance,Junction-to-Case	$R_{\theta JC}$	41.7	℃/W
Operating Junction and Storage Temperature Range	T_{STG}, T_J	-55 To 150	℃

Electrical characteristics

(T_A=25℃, unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
Drain-source breakdown voltage	$BV_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =30V,V_{GS} = 0V			1	uA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V , V_{DS}=0V			±100	uA
Gate-source threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	1	1.5	2.5	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =10V, I_D =12A		3.8	5.8	mΩ
		V_{GS} =4.5V, I_D =10A		5.8	8.8	
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=15V, V_{GS}=0V, f=1MHz		3500		pF
Output Capacitance	C_{oss}			380		
Reverse Transfer Capacitance	C_{rss}			290		
Switching Characteristics						
Turn-On Delay Time	$T_{d(on)}$	V_{DD}=15V, I_D =20A, V_{GS}=10V, R_{GEN}=3Ω		12		nS
Rise Time	T_r			15		
Turn-Off Delay Time	$T_{d(off)}$			40		
Fall Time	T_f			14		
Total Gate Charge	Q_g	V_{DS}=15V, I_D =45A, V_{GS}=10V		60		pF
Gate-Source Charge	Q_{gs}			8.2		
Gate-Drain Charge	Q_{gd}			16.4		
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=1A			1.2	V

Typical Characteristics

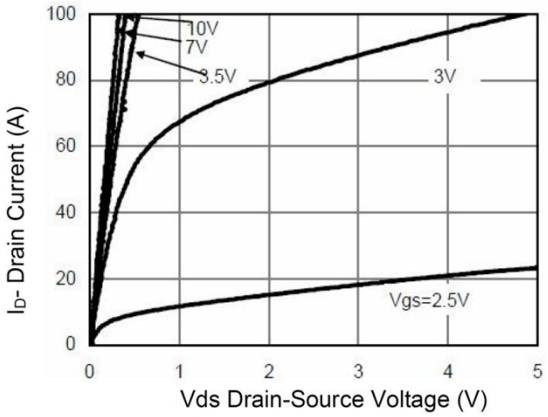


Figure 1 Output Characteristics

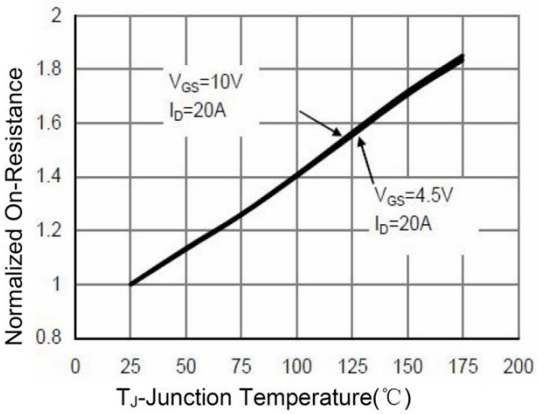


Figure 4 Rdson-Junction Temperature

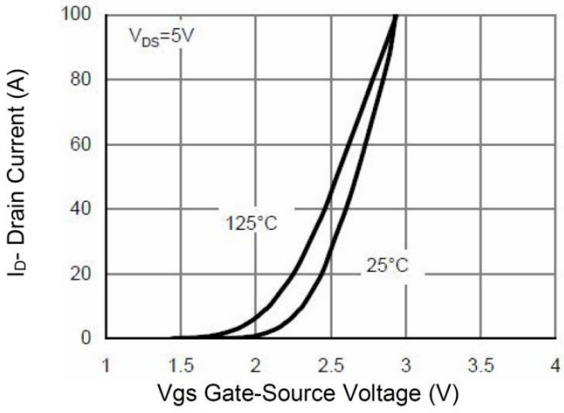


Figure 2 Transfer Characteristics

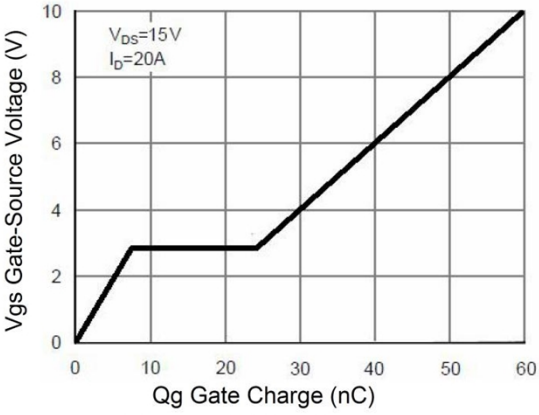


Figure 5 Gate Charge

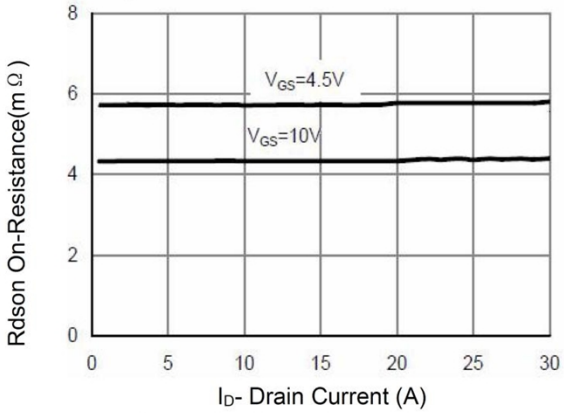


Figure 3 Rdson- Drain Current

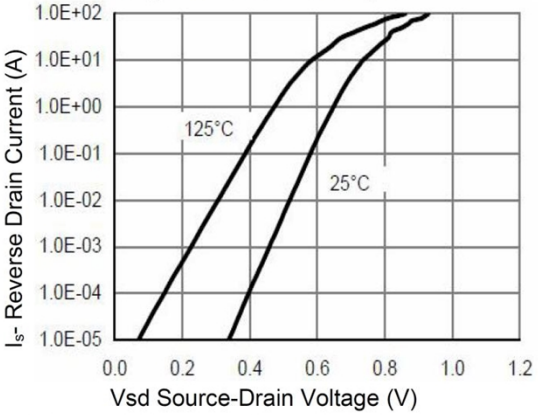


Figure 6 Source- Drain Diode Forward

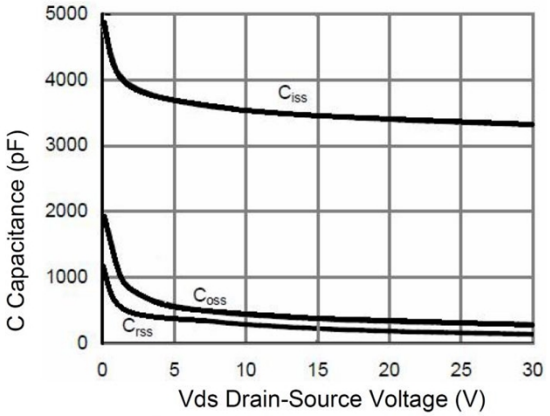


Figure 7 Capacitance vs Vds

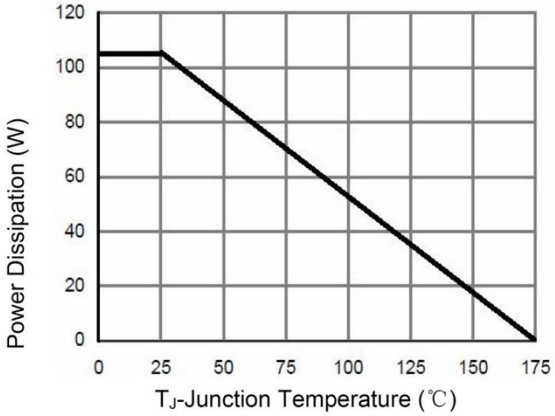


Figure 9 Power De-rating

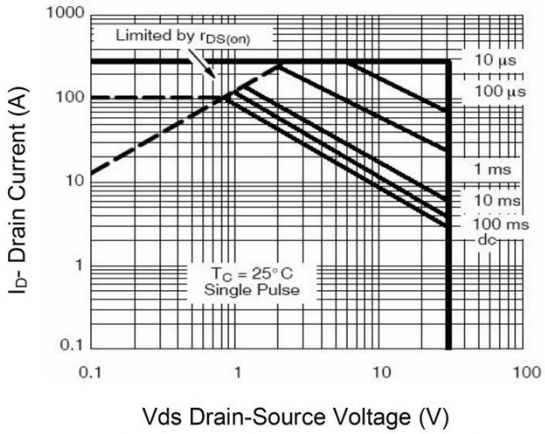


Figure 8 Safe Operation Area

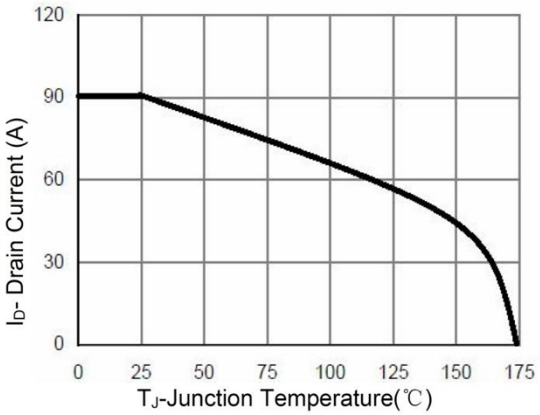


Figure 10 ID Current Derating

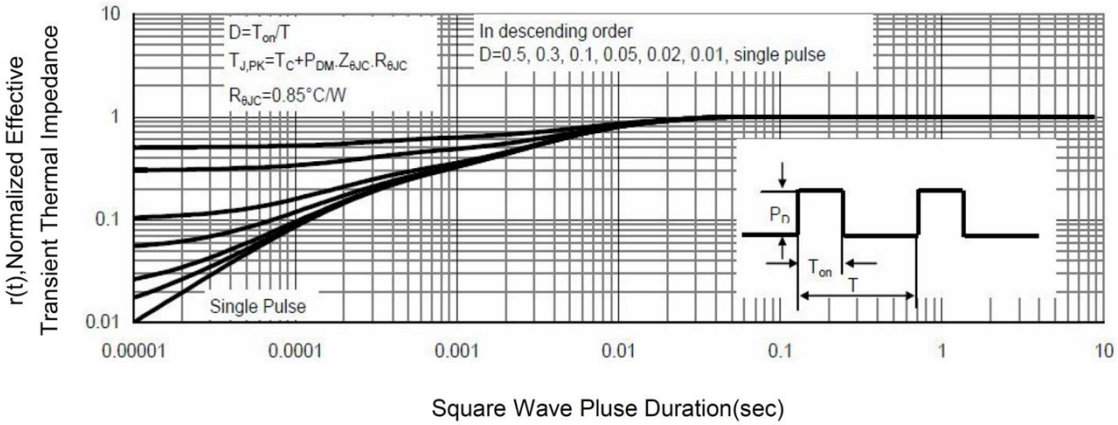
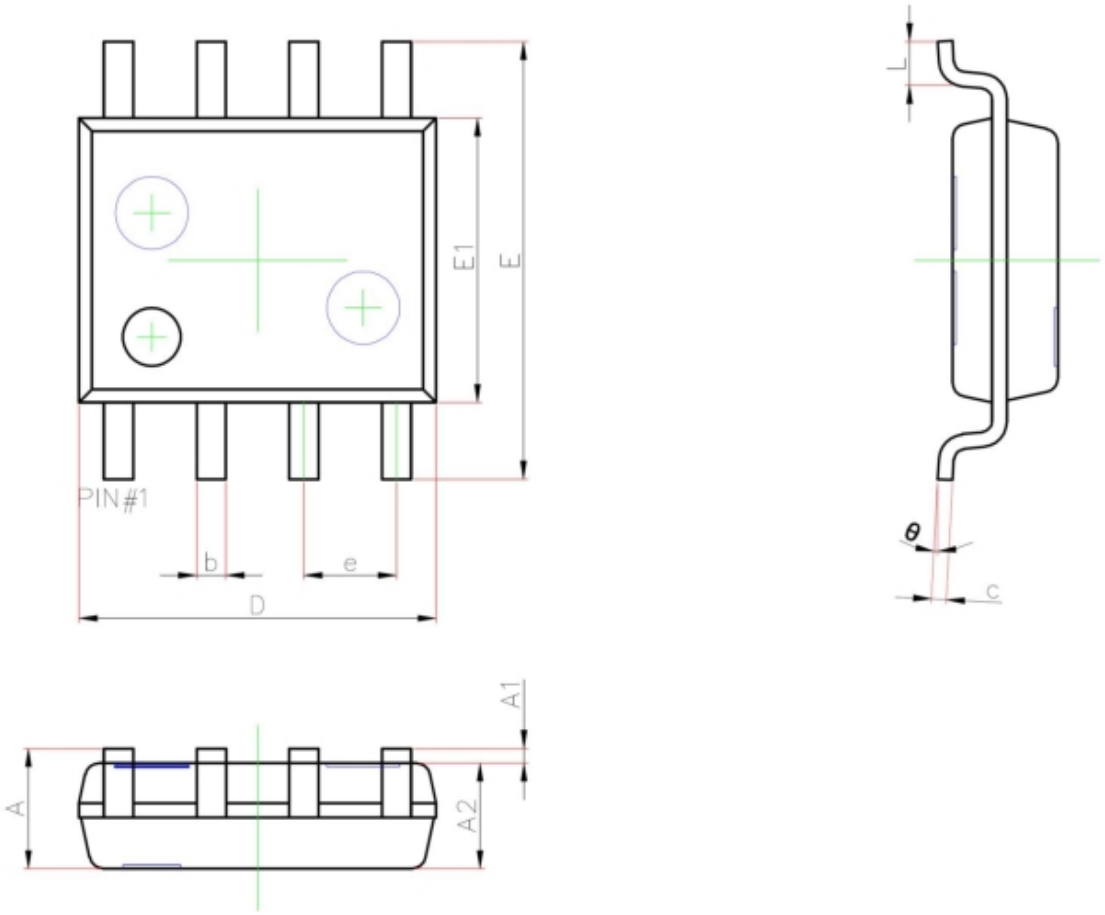


Figure 11 Normalized Maximum Transient Thermal Impedance

SOP-8 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.35	1.75
A1	0.10	0.25
A2	1.35	1.55
b	0.33	0.51
c	0.17	0.25
D	4.80	5.00
e	1.27 REF.	
E	5.80	6.20
E1	3.80	4.00
L	0.40	1.27
θ	0°	8°