

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	2.6mΩ@10V	150A
	3.7mΩ@4.5V	

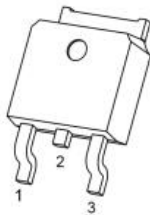
Feature

- Fast Switching
- Low Gate Charge and R_{ds(on)}
- 100% Single Pulse avalanche energy Test

Applications

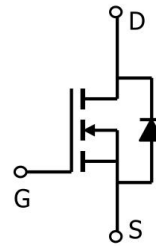
- DC-DC Converter
- Ideal for high-frequency switching and synchronous rectification

Package

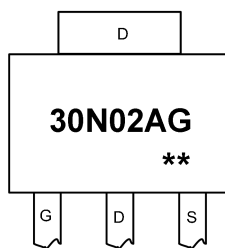


TO-252(1:G 2:D 3:S)

Circuit diagram



Marking



30N02AG =Device Code
****** =Week Code

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Rating	Units
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹ (T _C =25°C)	I_D	150	A
Pulsed Drain Current ²	I_{DM}	600	A
Single Pulse Avalanche Energy ³	E_{AS}	405	mJ
Total Power Dissipation(T _C =25°C)	P_D	110	W
Thermal Resistance Junction-Case ¹	$R_{\theta JC}$	1.13	°C/W
Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

Electrical characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	30	---	---	V
Drain-Source Leakage Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V, T_J=25^\circ C$	---	---	1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	---	---	± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{GS}=V_{DS}, I_D=250\mu A$	1	1.8	2.5	V
Static Drain-Source On-Resistance ²	$R_{DS(on)}$	$V_{GS}=10V, I_D=20A$	---	2.6	3.3	m Ω
		$V_{GS}=4.5V, I_D=20A$	---	3.7	5	
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS}=15V, V_{GS}=0V, f=1MHz$	---	4090	---	pF
Output Capacitance	C_{oss}		---	470	---	
Reverse Transfer Capacitance	C_{rss}		---	76	---	
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS}=15V, V_{GS}=10V, I_D=20A$	---	36	---	nC
Gate-Source Charge	Q_{gs}		---	6.5	---	
Gate-Drain Charge	Q_{gd}		---	5.5	---	
Turn-On Delay Time	$T_{d(on)}$	$V_{DD}=15V, V_{GS}=10V, R_G=1.6\Omega, I_D=20A$	---	7	---	ns
Rise Time	T_r		---	4.5	---	
Turn-Off Delay Time	$T_{d(off)}$		---	34	---	
Fall Time	T_f		---	8	---	
Diode Characteristics						
Diode Forward Voltage ²	V_{SD}	$V_{GS}=0V, I_S=1A, T_J=25^\circ C$	---	---	1.2	V

Note :

- The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper.
- The data tested by pulsed , pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$
- The EAS data shows Max. rating . The test condition is $V_{DD}=15V, V_{GS}=10V, L=0.5mH, R_G=25\Omega$

Typical Characteristics

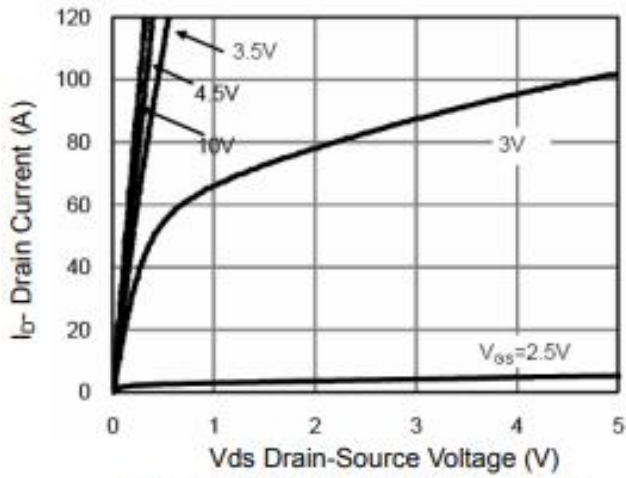


Figure 1 Output Characteristics

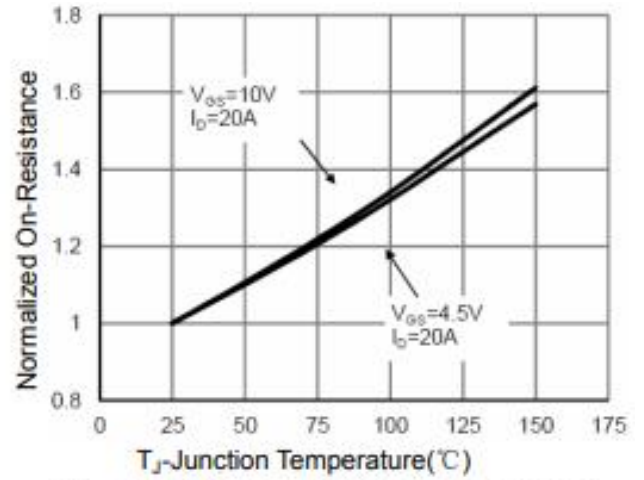


Figure 4 Rdson-Junction Temperature

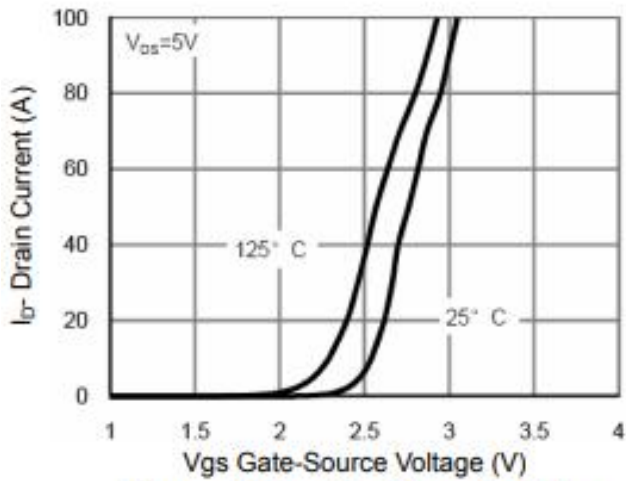


Figure 2 Transfer Characteristics

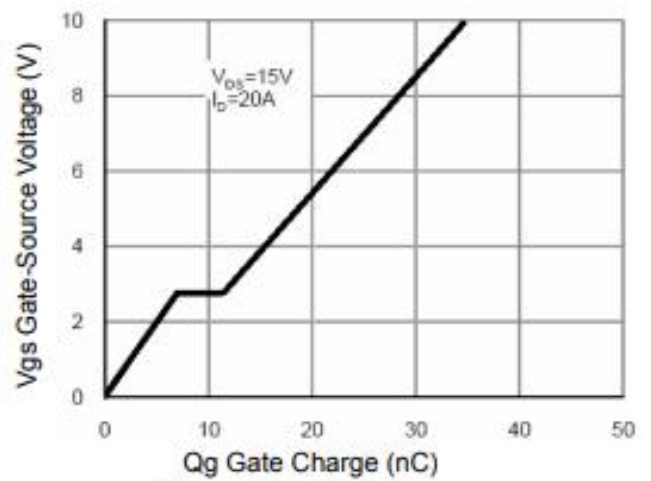


Figure 5 Gate Charge

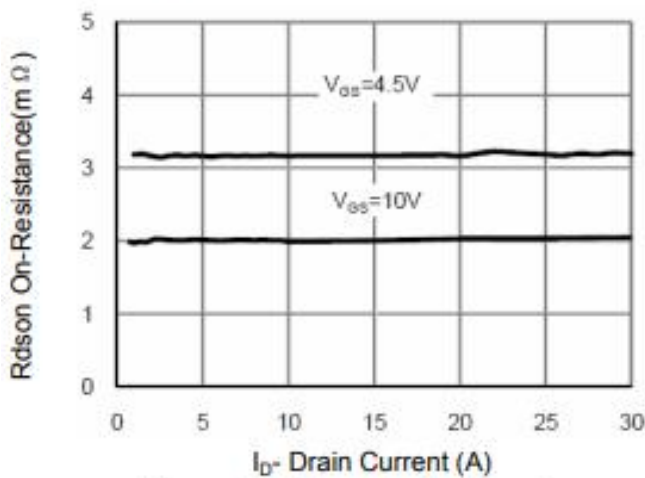


Figure 3 Rdson- Drain Current

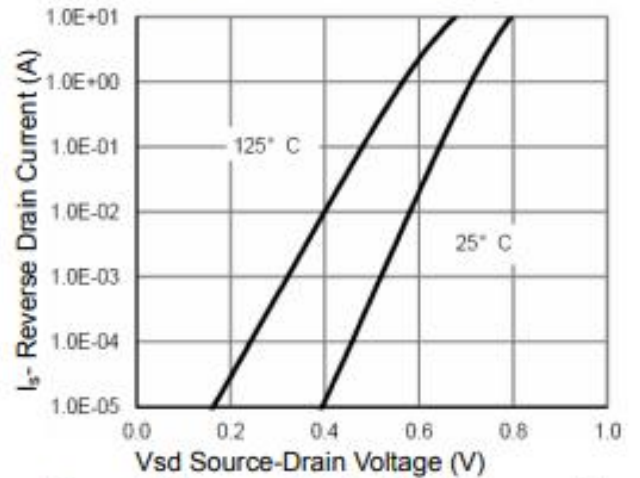


Figure 6 Source- Drain Diode Forward

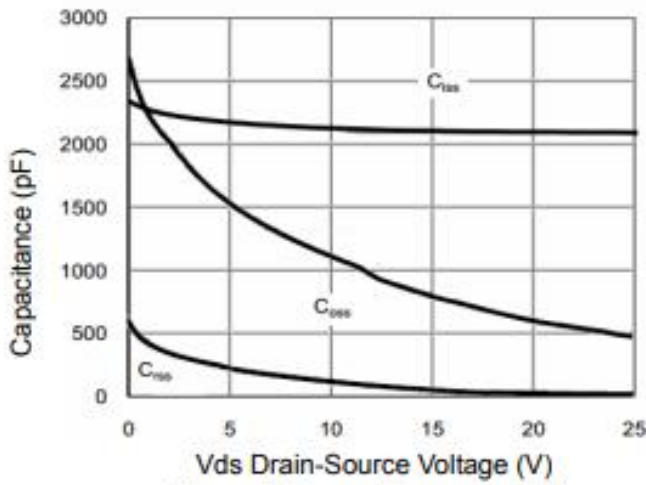


Figure 7 Capacitance vs Vds

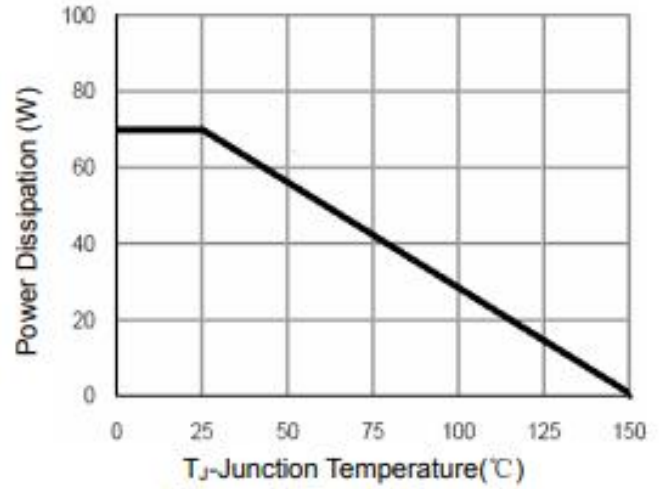


Figure 9 Power De-rating

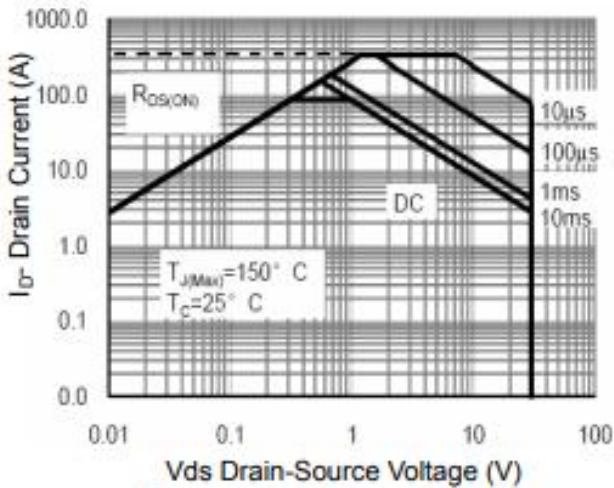


Figure 8 Safe Operation Area

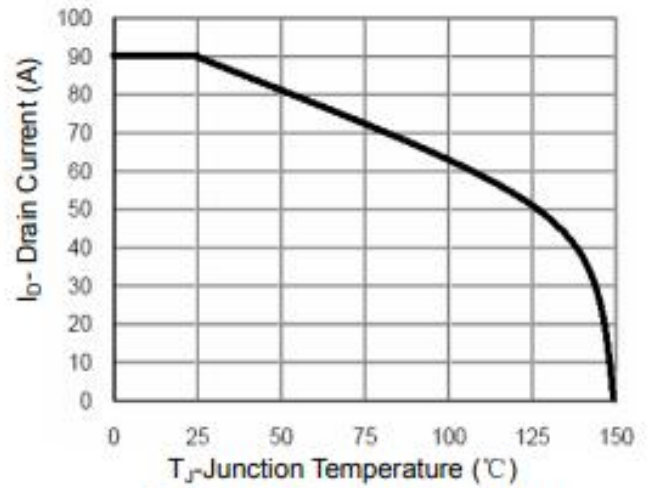


Figure 10 Current De-rating

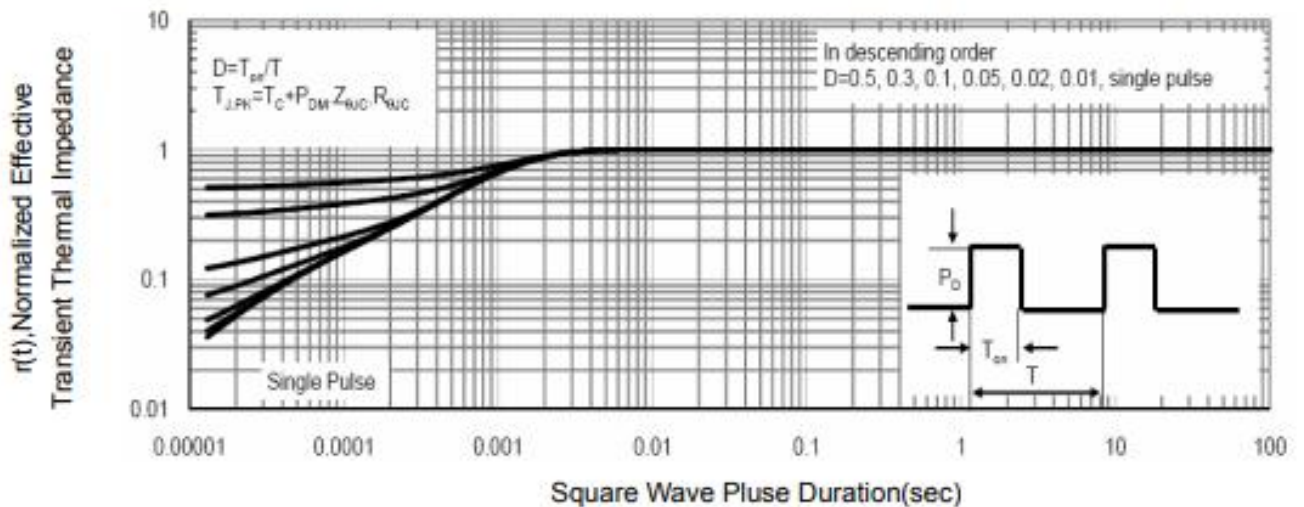
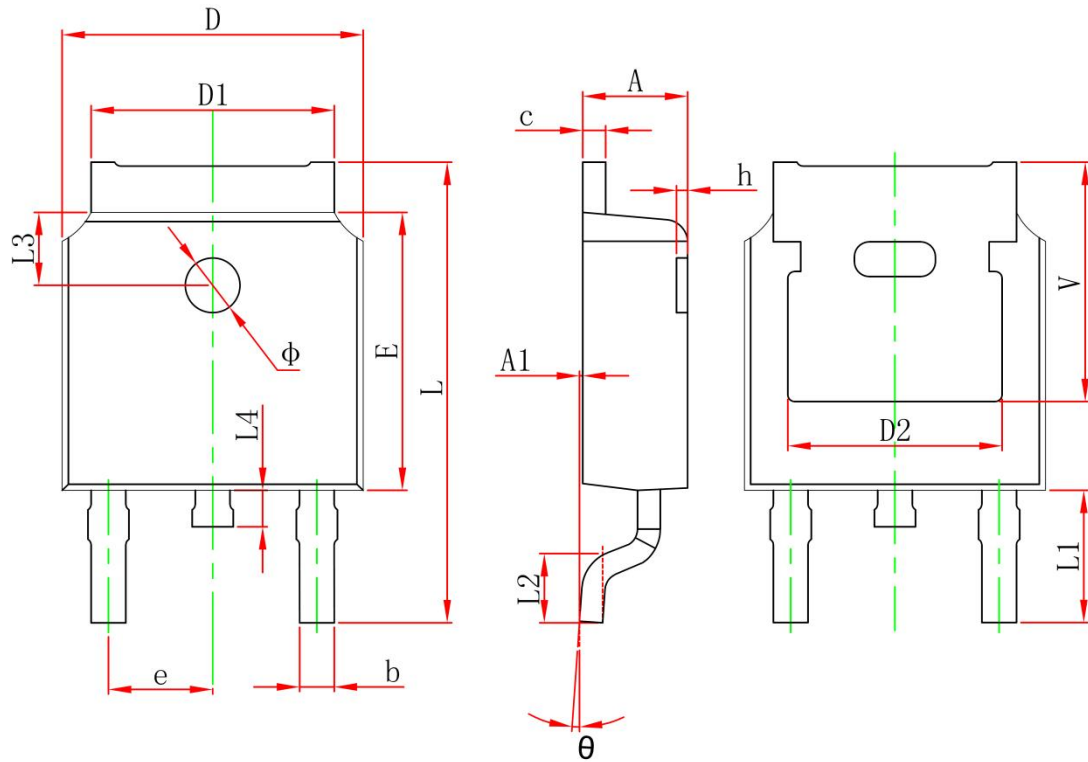


Figure 11 Normalized Maximum Transient Thermal Impedance



TO-252 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 REF.		0.211 REF.	

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [MOSFET](#) category:

Click to view products by [Siliup](#) manufacturer:

Other Similar products are found below :

[IRFD120](#) [IRFY240C](#) [JANTX2N5237](#) [2SK2267\(Q\)](#) [BUK455-60A/B](#) [MIC4420CM-TR](#) [VN1206L](#) [NDP4060](#) [SI4482DY](#)
[IPS70R2K0CEAKMA1](#) [SQD23N06-31L-GE3](#) [TK16J60W,S1VQ\(O](#) [2SK2614\(TE16L1,Q\)](#) [DMN1017UCP3-7](#) [EFC2J004NUZTDG](#)
[DMN1053UCP4-7](#) [SQJ469EP-T1-GE3](#) [NTE2384](#) [DMC2700UDMQ-7](#) [DMN2080UCB4-7](#) [DMN61D9UWQ-13](#) [US6M2GTR](#)
[DMN31D5UDJ-7](#) [DMP22D4UFO-7B](#) [DMN1006UCA6-7](#) [DMN16M9UCA6-7](#) [STF5N65M6](#) [IRF40H233XTMA1](#) [STU5N65M6](#)
[DMN6022SSD-13](#) [DMN13M9UCA6-7](#) [DMTH10H4M6SPS-13](#) [DMN2990UFB-7B](#) [IPB80P04P405ATMA2](#) [2N7002W-G](#) [MCAC30N06Y-](#)
[TP](#) [MCQ7328-TP](#) [NTMC083NP10M5L](#) [NVMFS2D3P04M8LT1G](#) [BXP7N65D](#) [BXP4N65F](#) [AOL1454G](#) [WMJ80N60C4](#) [BXP2N20L](#)
[BXP2N65D](#) [BXT1150N10J](#) [BXT1700P06M](#) [TSM60NB380CP](#) [ROG](#) [RQ7L055BGTCR](#) [DMNH15H110SK3-13](#)