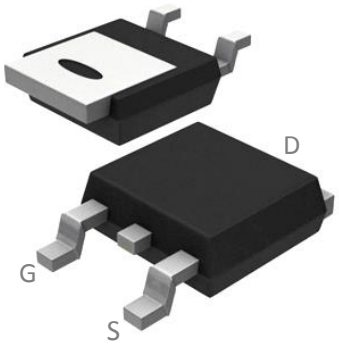
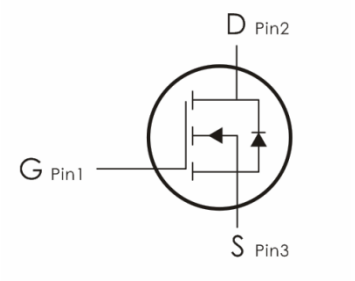
Description：

This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.





Features：

1) V_{DS}=150V,I_D=7A,$R_{DS(ON)}$<290mΩ @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Absolute Maximum Ratings： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current-T_C=25℃	7	A
	Continuous Drain Current-T_C=100℃	6.5	
	Pulsed Drain Current	58	
E_{AS}	Single Pulse Avalanche Energy[5]	150	mJ
P_D	Power Dissipation,T_C=25℃	30	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	℃

Thermal Characteristics：

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance,Junction to Case	4.17	℃/W

Package Marking and Ordering Information：

Part NO.	Marking	Package
DOD7N15	7N15	TO-252

Electrical Characteristics： (T_C=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	150	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=150V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics[3]						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1.5	1.8	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[2]	V_{GS}=10V,I_D=5A	---	255	290	mΩ
G_{FS}	Forward Transconductance	V_{DS}=25V, I_D=6A	3.5	---	---	S
Dynamic Characteristics[4]						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	690	---	pF
C_{oss}	Output Capacitance		---	120	---	
C_{rss}	Reverse Transfer Capacitance		---	90	---	
Switching Characteristics[4]						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=30V, I_D=2A, V_{GS}=10V,R_{GEN}=2.5Ω	---	11	---	ns
t_r	Rise Time		---	7.4	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	35	---	ns
t_f	Fall Time		---	9.1	---	ns
Q_g	Total Gate Charge	V_{GS}=10V, V_{DS}=30V, I_D=3A	---	15.5	---	nC
Q_{gs}	Gate-Source Charge		---	3.2	---	nC
Q_{gd}	Gate-Drain “Miller” Charge		---	4.7	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage[3]	V_{GS}=0V,I_S=9A	---	---	1.5	V
Is	Continuous Source Current[2]			---	7	A

trr	Reverse Recovery Time	TJ = 25°C, IF =6A di/dt = 100A/μs(Note3)	21	---	Ns
qrr	Reverse Recovery Charge		97	---	nc

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

4. Guaranteed by design, not subject to production

5. E_{AS} condition : Tj=25℃,V_{DD}=10V,V_G=10V,L=0.5mH,Rg=25Ω，

Typical Characteristics：

(T_C=25℃ unless otherwise noted)

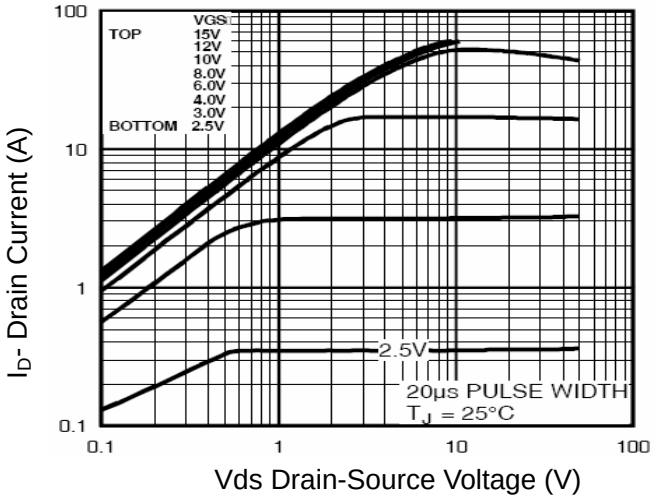


Figure 1 Output Characteristics

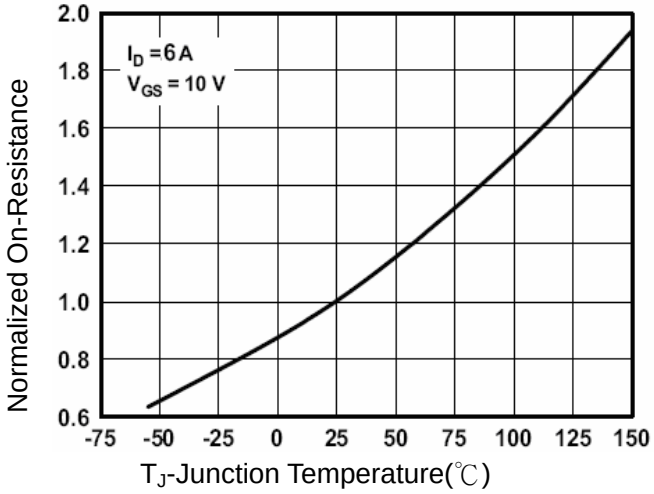


Figure 4 Rdson-JunctionTemperature

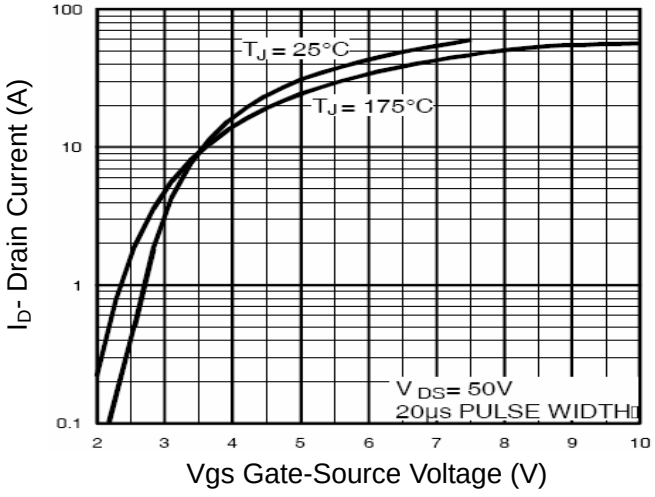


Figure 2 Transfer Characteristics

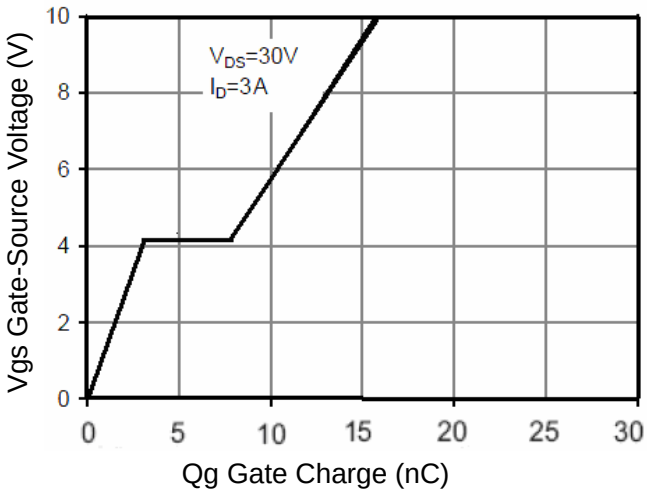


Figure 5 Gate Charge

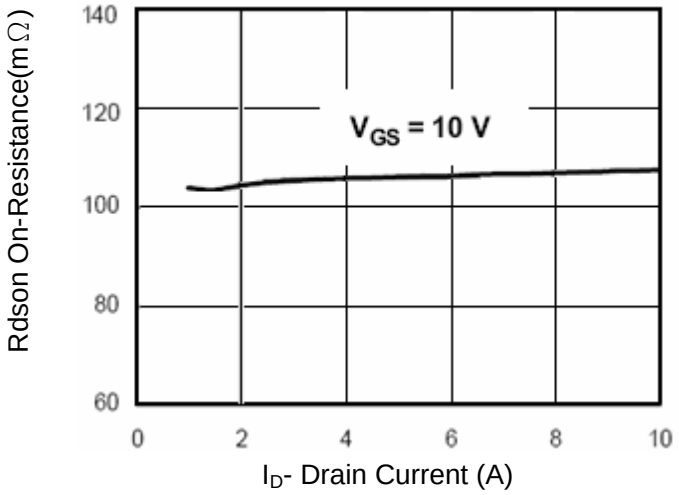


Figure 3 Rdson- Drain Current

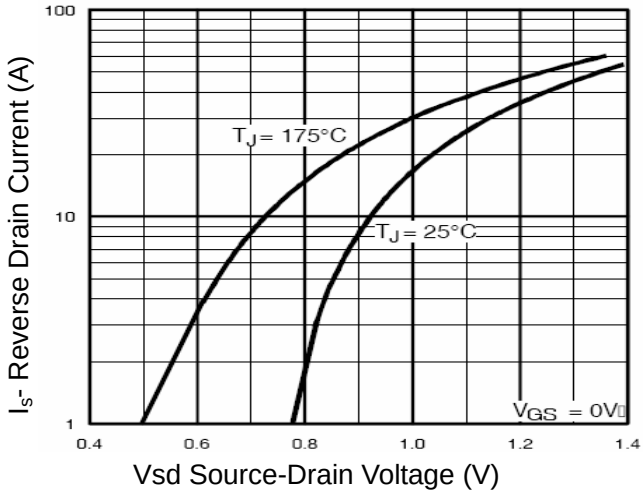


Figure 6 Source- Drain Diode Forward

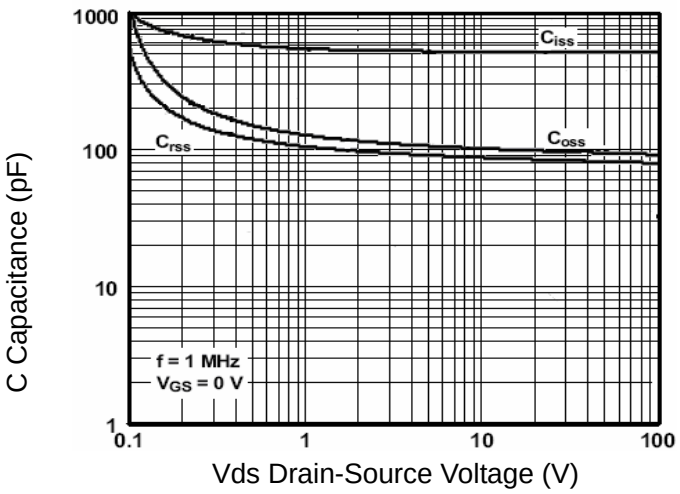


Figure 7 Capacitance vs Vds

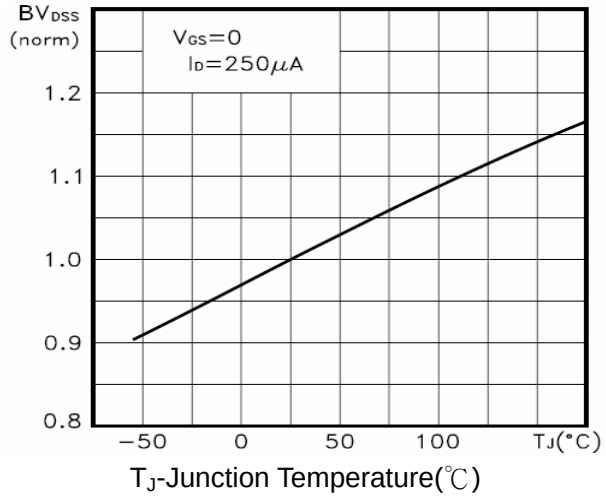


Figure 9 BV_{DSS} vs Junction Temperature

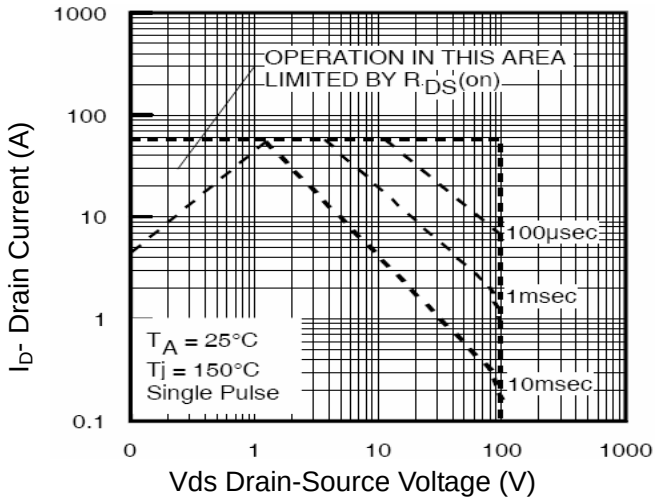


Figure 8 Safe Operation Area

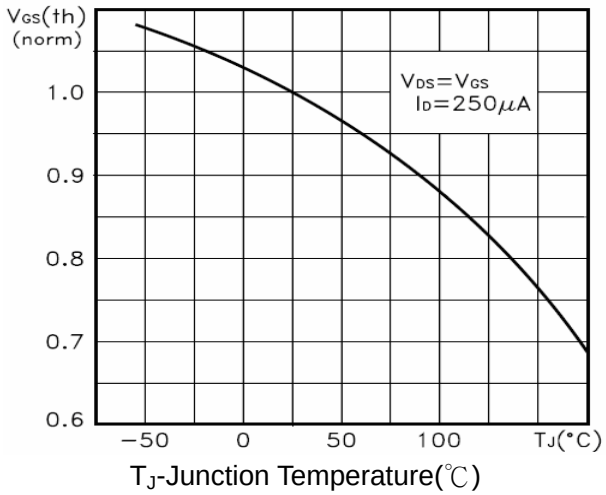


Figure 10 $V_{GS(th)}$ vs Junction Temperature

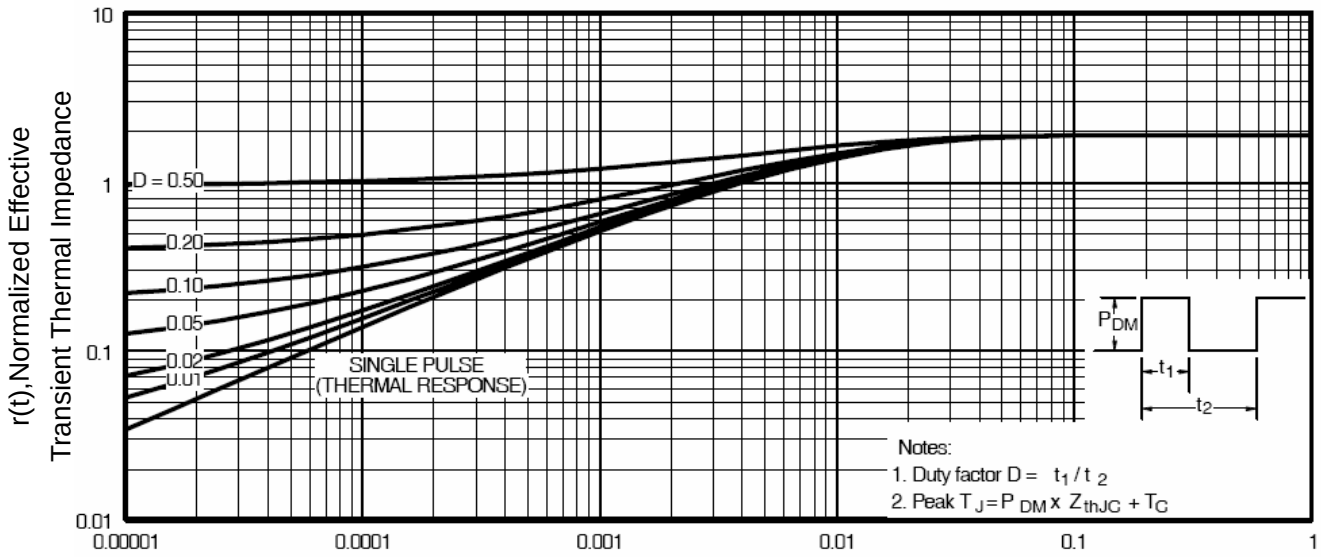


Figure 11 Normalized Maximum Transient Thermal Impedance