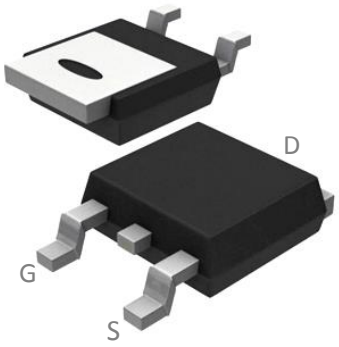
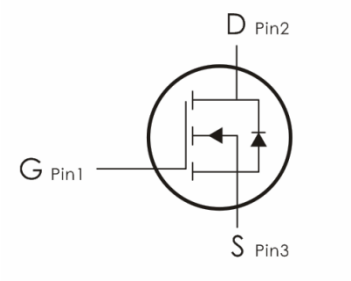
Description：

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}=100V,I_D=11.3A,$R_{DS(ON)}$<120mΩ @V_{GS}=10V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
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	100	V
V_{GS}	Gate-Source Voltage	±20	V
I_D	Continuous Drain Current-T_C=25℃[G]	11.3	A
	Continuous Drain Current-T_C=70℃	9	
I_{DM}	Pulsed Drain Current	45.4	A
P_D	Power Dissipation,T_C=25℃	29.9	W
	Power Dissipation,T_C=70℃	19.1	
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
DOD12N10	12N10	TO-252

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

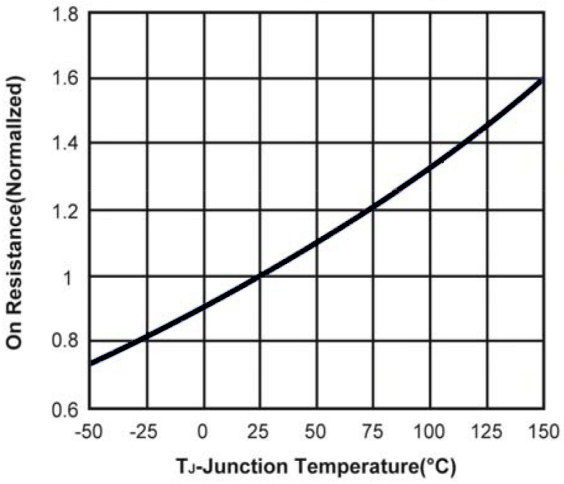
Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
$V_{(BR)DSS}$	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	100	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=100V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±20V, V_{DS}=0A	---	---	±100	nA
On Characteristics						
$V_{GS(th)}$	GATE-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	1.22	---	2.4	V
$R_{DS(ON)}$	Drain-Source On Resistance[a]	V_{GS}=10V,I_D=8A	---	---	120	mΩ
		V_{GS}=4.5V,I_D=4A	---	---	140	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	---	500	---	pF
C_{oss}	Output Capacitance		---	48	---	
C_{rss}	Reverse Transfer Capacitance		---	27	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=30V, R_L =15Ω V_{GS}=10V, R_{GEN}=2.5Ω	---	12.4	---	ns
t_r	Rise Time		---	12	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	27.3	---	ns
t_f	Fall Time		---	2.6	---	ns
Q_g	Total Gate Charge	V_{DS}=30V, V_{GS}=10V, I_D=3A	---	16.8	---	nC
Q_{gs}	Gate-Source Charge		---	5	---	nC
Q_{gd}	Gate-Drain Charge		---	4	---	nC
Drain-Source Diode Characteristics						
V_{SD}	Source-Drain Diode Forward Voltage	I_S=1A, V_{GS}=0V	---	---	1.1	V

Notes:

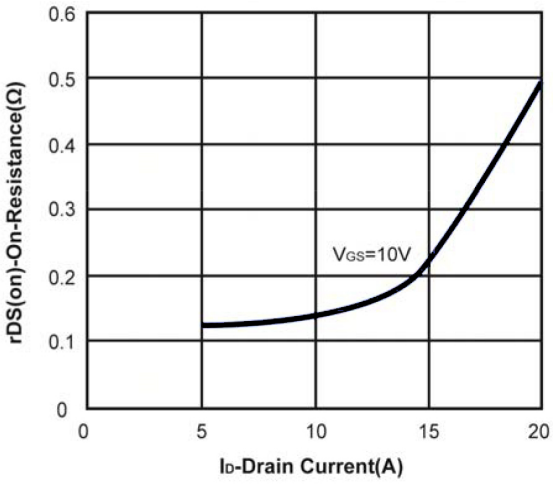
Pulse test: pulse width ≦ 300us, duty cycle≦ 2%, Guaranteed by design, not subject to production testing.

Typical Characteristics: (T_J=25℃ unless otherwise noted)

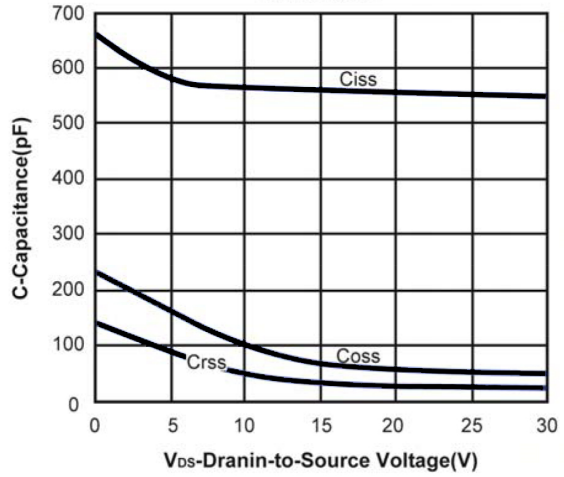
On Resistance vs. Junction Temperature



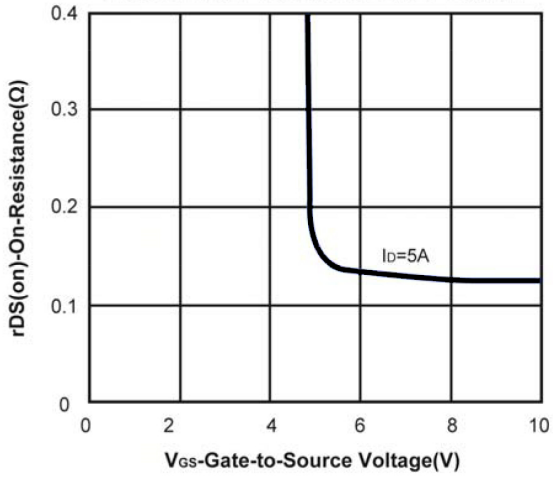
On Resistance vs. Drain Current



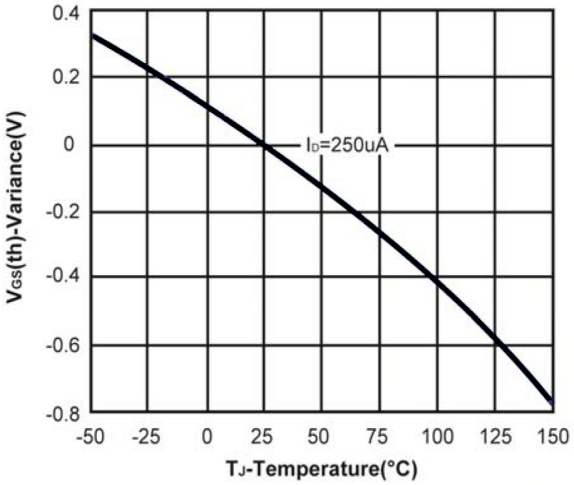
Capacitance



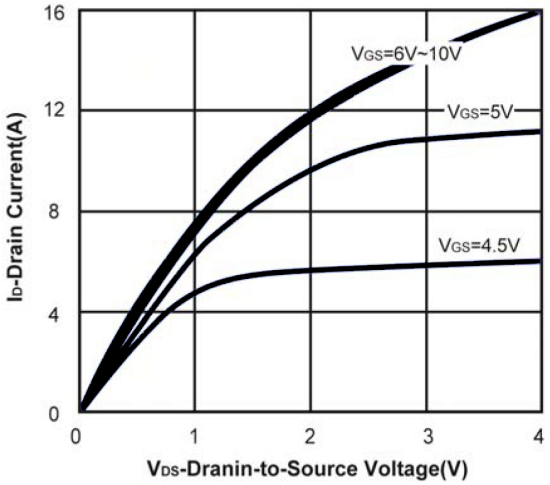
On Resistance vs. Gate-to-Source Voltage



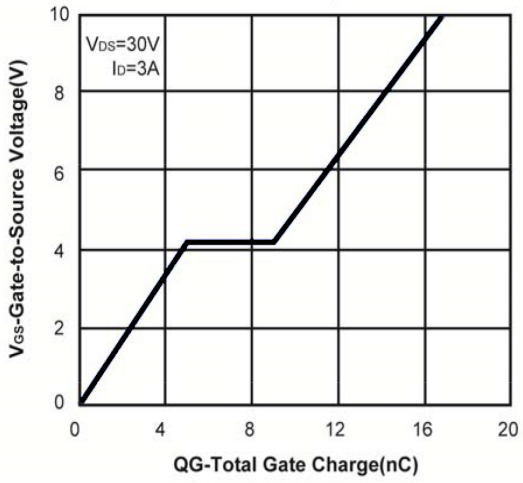
Threshold Voltage



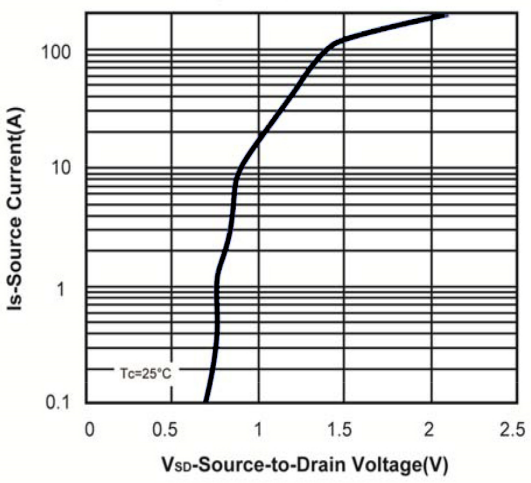
On-Region Characteristics



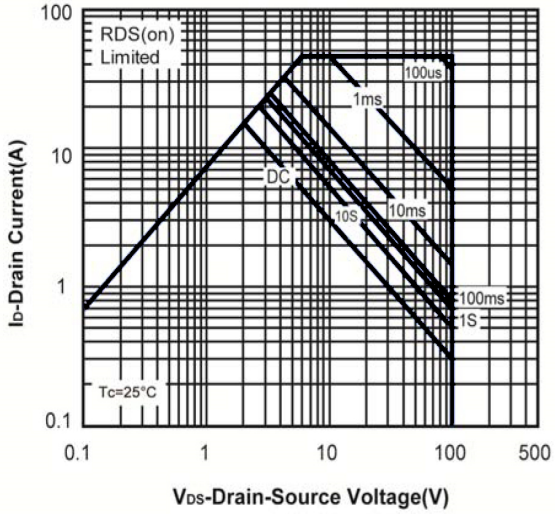
Gate Charge



Body-diode characteristics



Maximum Forward Biased Safe Operating Area



Normalized Thermal Transient Impedance, Junction-to-Case