

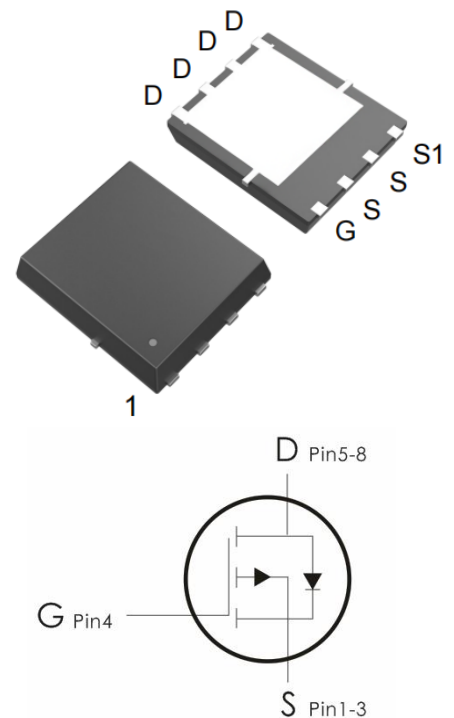
Description:

This P-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) $V_{DS}=-30V, I_D=-110A, R_{DS(on)}<5m\Omega @V_{GS}=10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
DON110P03	110P03	DFN5*6-8	5000 pcs/Reel

Absolute Maximum Ratings: ($T_C=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	-30	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^{\circ}C$	-110	A
	Continuous Drain Current- $T_C=100^{\circ}C$	-65	
I_{DM}	Pulsed Drain Current ¹	-320	
E_{AS}	Single Pulse Avalanche Energy	200	mJ
P_D	Power Dissipation	100	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^{\circ}C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	1.25	$^{\circ}C/W$

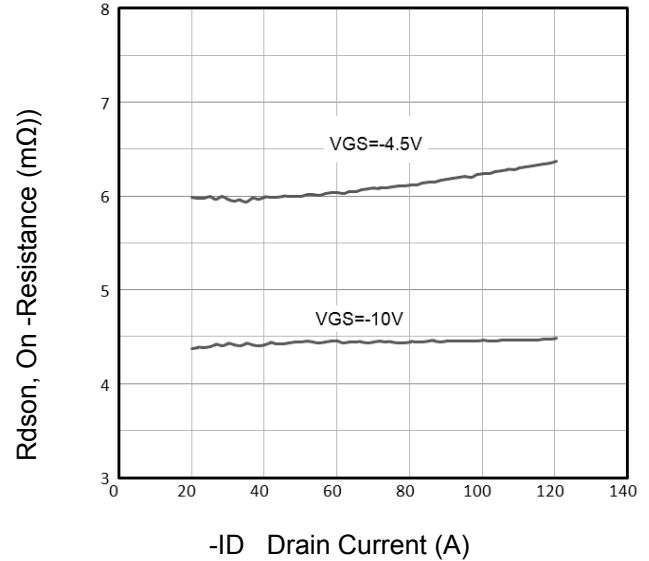
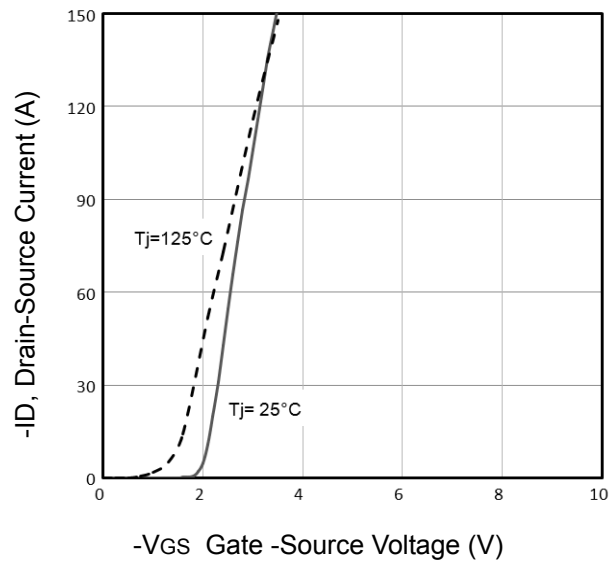
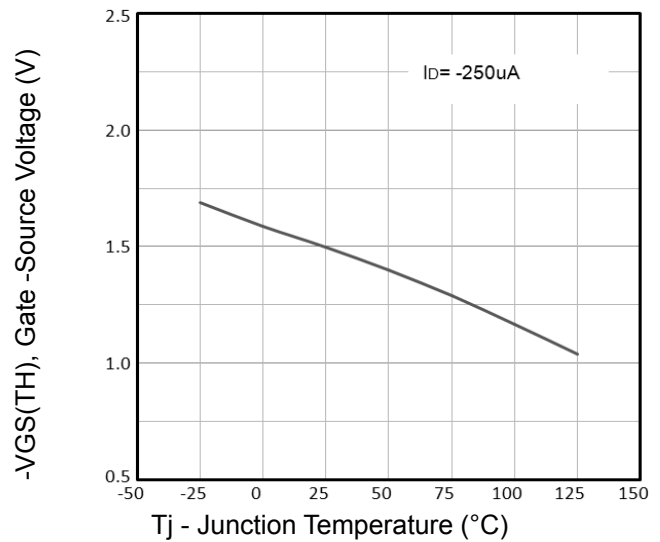
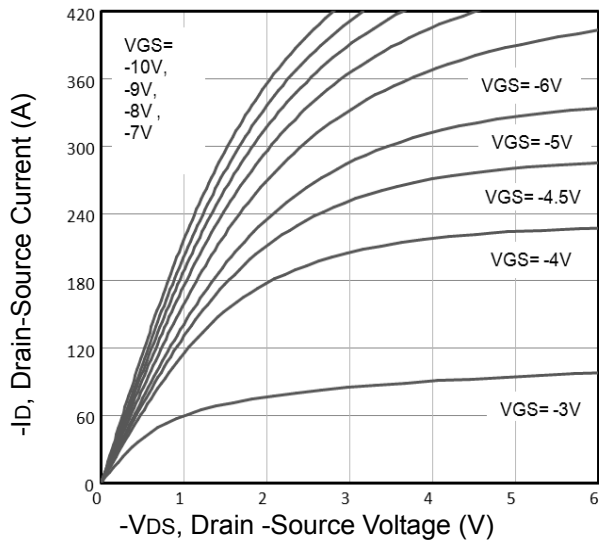
Electrical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Sourctce Breakdown Voltage	V _{GS} =0V, I _D =-250 μ A	-30	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =-24V	---	---	-1	μ A
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 =-250 μ A	-1	-1.3	-2	V
R _{DS(ON)}	Drain-Source On Resistance ⁴	V _{GS} =-10V, I _D =-20A	---	3.5	5	m Ω
		V _{GS} =-4.5V, I _D =-10A	---	5.5	8	
Dynamic Characteristics						
C _{iss}	Input Capacitance ⁵	V _{DS} =-15V, V _{GS} =0V, f=1MHz	---	4349	---	pF
C _{oss}	Output Capacitance ⁵		---	919	---	
C _{rss}	Reverse Transfer Capacitance ⁵		---	719	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time ⁵	V _{DD} =-15V, I _D =-1A, R _{GEN} =6Ω, V _{GS} =-10V	---	11	---	ns
t _r	Rise Time ⁵		---	11	---	ns
t _{d(off)}	Turn-Off Delay Time ⁵		---	108	---	ns
t _f	Fall Time ⁵		---	67	---	ns
Q _g	Total Gate Charge ⁵	V _{GS} =-10V, V _{DS} =-15V, I _D =-20A	---	96	---	nC
Q _{gs}	Gate-Source Charge ⁵		---	5.4	---	nC
Q _{gd}	Gate-Drain “Miller” Charge ⁵		---	27	---	nC
Drain-Source Diode Characteristics						
Symbol	Parameter	Conditions	Min	Typ	Max	Units
V _{SD}	Source-Drain Diode Forward Voltage ⁵	V _{GS} =0V, I _S =-1A	---	-0.7	-1	V
I _S	Maximum Continuous Drain to Source Diode Forward Current	VD=VG=0V	---	---	-110	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current	VD=VG=0V	---	---	-320	A
T _{rr}	Reverse Recovery Time ⁵	I _{SD} =-20A, dI _{SD} /dt=100A/μs	---	16	---	NC
Q _{rr}	Reverse Recovery Charge ⁵		---	5	---	NS

Notes:

1. Pulse width is limited by max. junction temperature.
2. UIS tested and pulse width limited by maximum junction temperature 150oC (initial temperature $T_J=25^{\circ}\text{C}$).
3. Surface mounted on 1in2 pad area.
4. Pulse test ; pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
5. Guaranteed by design, not subject to production testing.

Typical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)



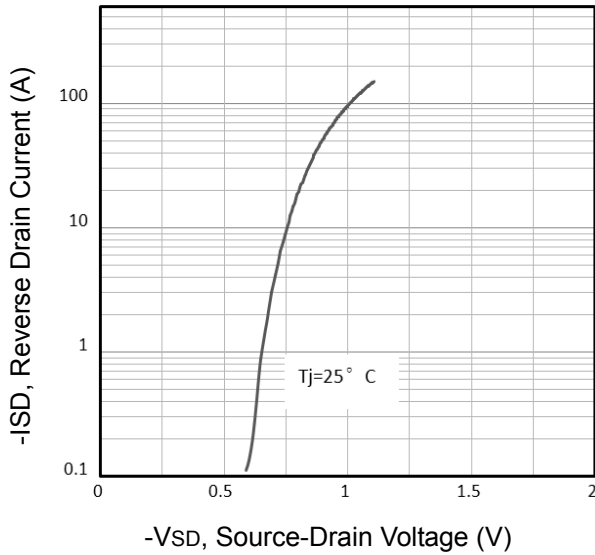


Fig5. Typical Source-Drain Diode Forward Voltage

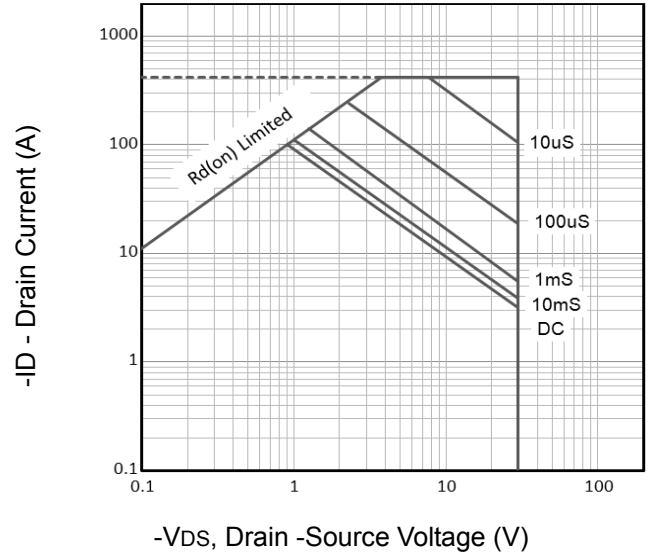


Fig6. Maximum Safe Operating Area

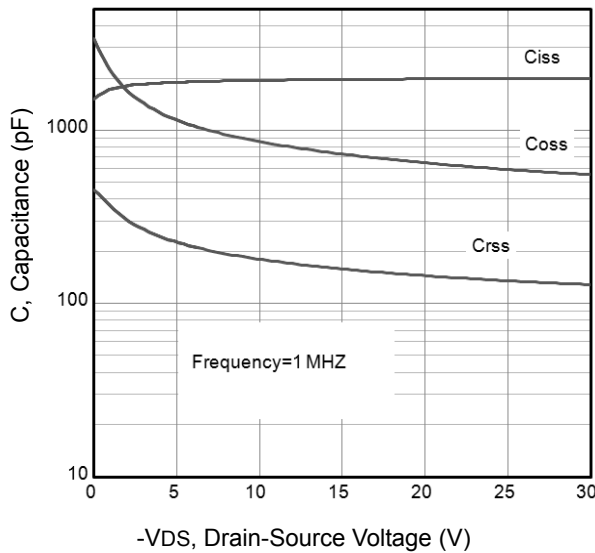


Fig7. Typical Capacitance Vs. Drain-Source Voltage

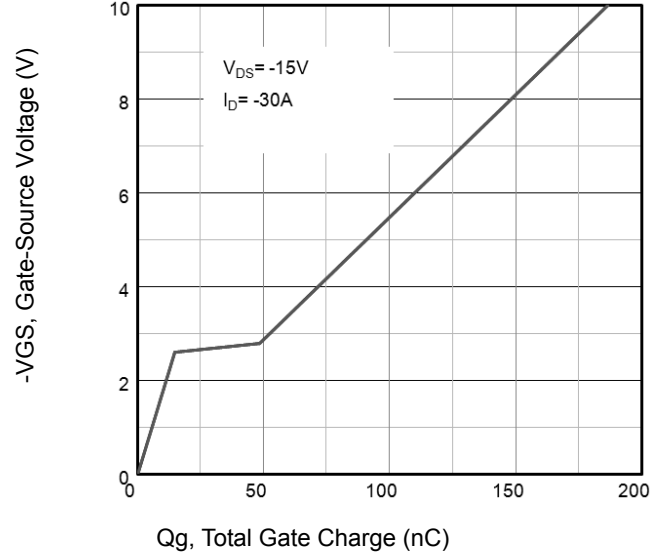


Fig8. Typical Gate Charge Vs. Gate-Source Voltage

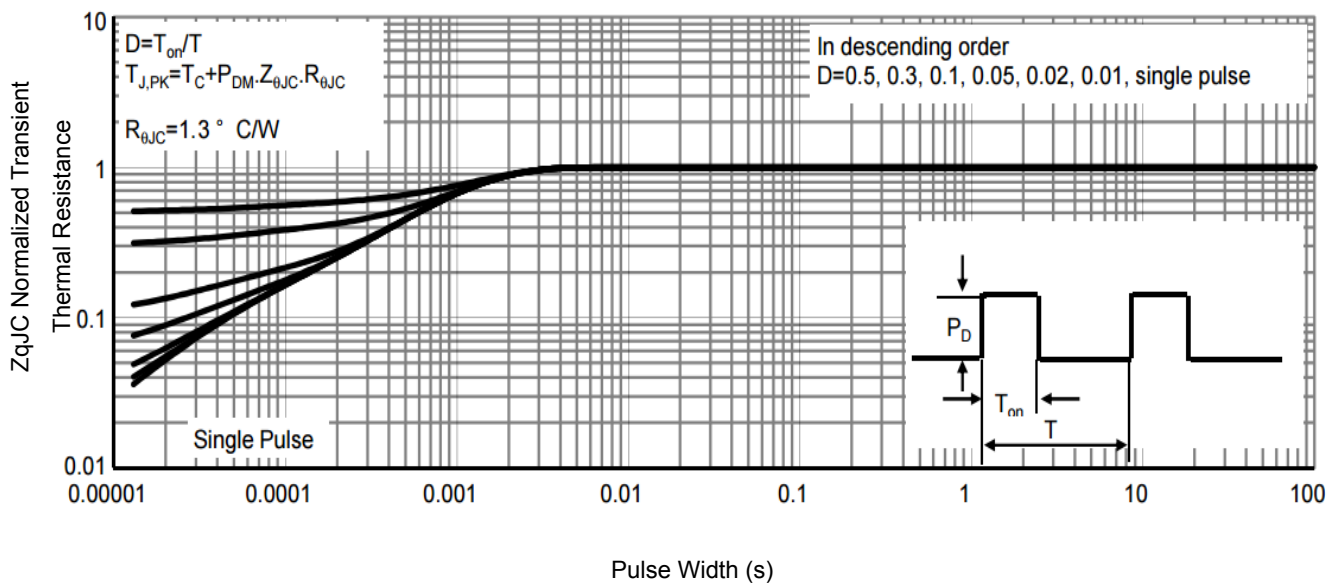


Fig9. Normalized Maximum Transient Thermal Impedance

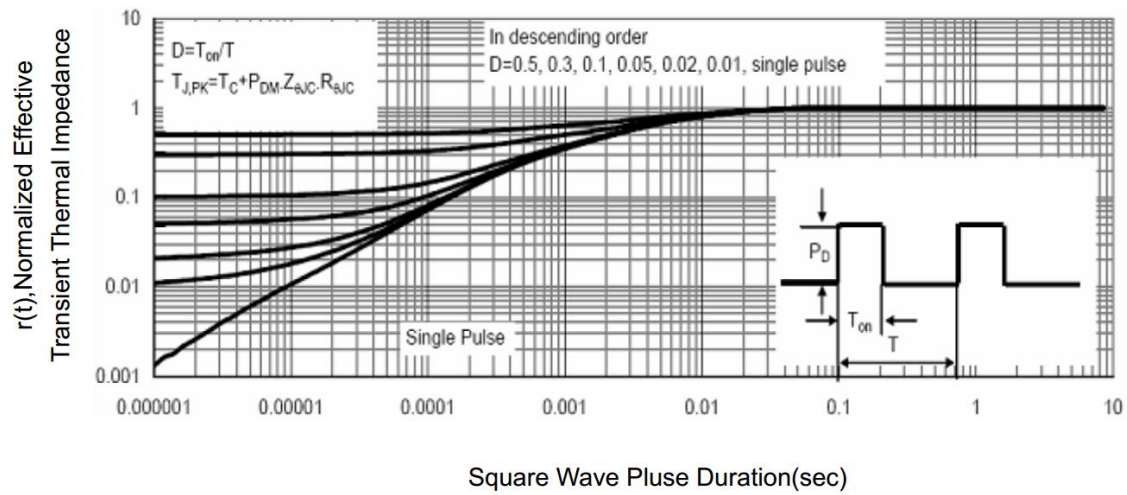
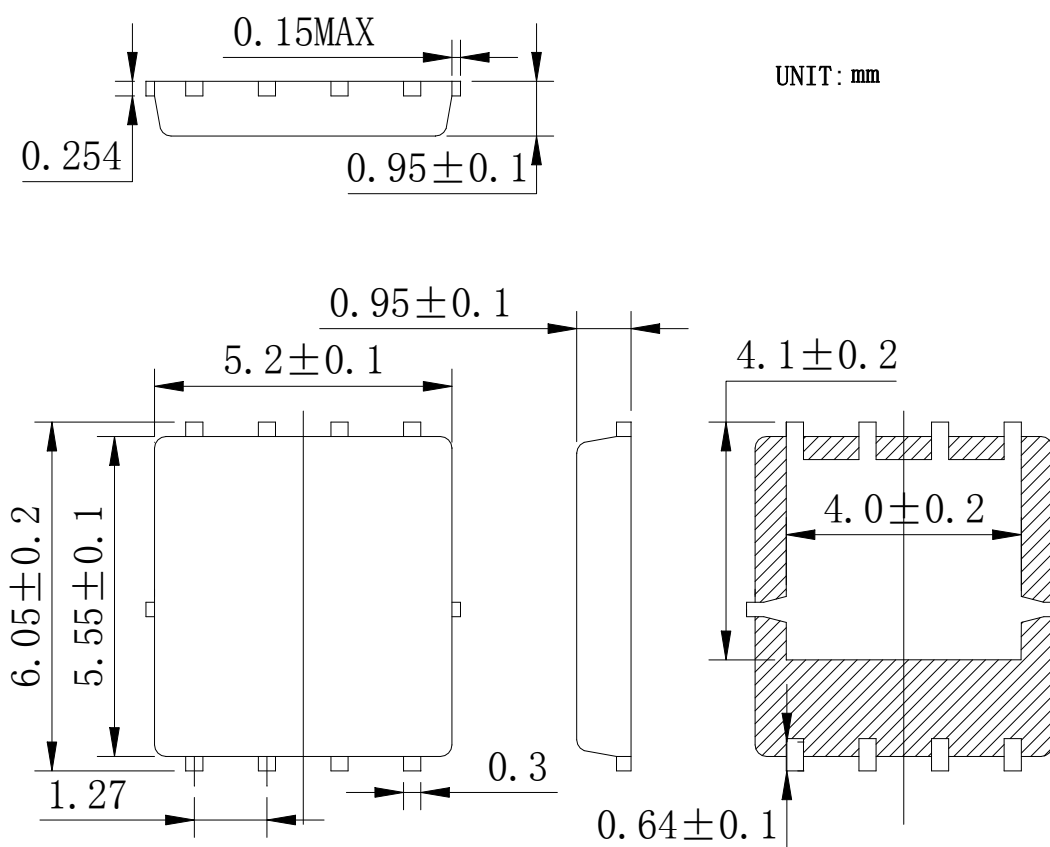


Figure 11 Normalized Maximum Transient Thermal Impedance

DFN5×6-8 Package Information:



Marking Information:

①. Doingter LOGO

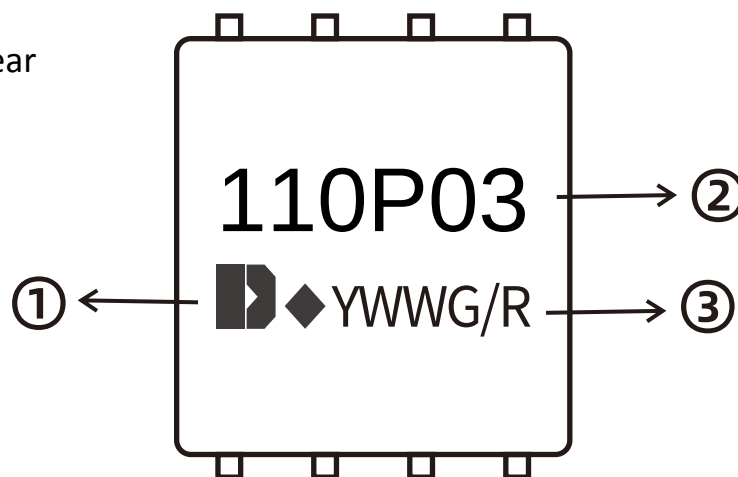
②. Part NO.

③. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

G/R : G(Green) /R(Lead Free)



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