

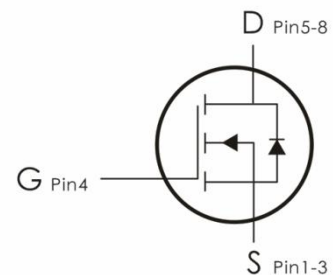
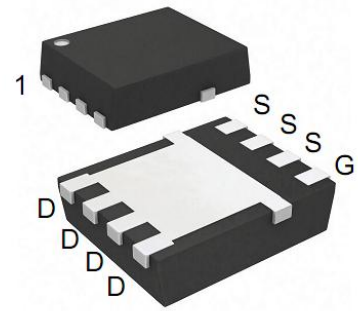
Description:

This N-Channel MOSFET uses advanced SGT 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) $V_{DS}=120V, I_D=110A, R_{DS(on)} < 6m\Omega @ V_{GS}=10V$ (Typ : $5m\Omega$)
- 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
DON110N12T	110N12T	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 ¹	120	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	110	A
	Continuous Drain Current- $T_C=100^\circ C$	75	
I_{DM}	Pulsed Drain Current ²	440	
P_D	Power Dissipation	142	W
E_{AS}	Single pulse avalanche energy	480	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55--+150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	0.88	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	62	$^\circ C/W$

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	120	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =120V	---	---	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	1.5	1.9	2.5	V
R _{DS(ON)}	Drain-Source On Resistance ³	V _{GS} =10V, I _D =45A	---	5	6	m Ω
		V _{GS} =4.5V, I _D =45A	---	6.2	8	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =60V, V _{GS} =0V, f=1MHz	---	3130	---	pF
C _{oss}	Output Capacitance		---	716.3	--	
C _{rss}	Reverse Transfer Capacitance		---	12.2	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =60V, I _D =55A, R _{ENG} =3 Ω ,V _{GS} =10V	---	19	---	ns
t _r	Rise Time		---	12.6	---	ns
t _{d(off)}	Turn-Off Delay Time		---	47	---	ns
t _f	Fall Time		---	109	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =60V, I _D =55A	---	47	---	nc
Q _{gs}	Gate-Source Charge		---	44.5	---	nc
Q _{gd}	Gate-Drain “Miller” Charge		---	6.65	---	nc
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{SD} =90A	---	---	1.2	V
I _S	Continuous Drain Curren	V _D =V _G =0V	---	---	110	A
I _{SM}	Pulsed Drain Current		---	---	440	A
T _{rr}	Reverse Recovery Time	I _F =35A T _J =25 °C	---	80	---	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/us	---	180	---	nc

Notes:

1. $T_J = +25^{\circ}\text{C}$ to $+150^{\circ}\text{C}$.
2. Repetitive rating; pulse width limited by maximum junction temperature.
3. Pulse width $\leq 380\mu\text{s}$; duty cycle $\leq 2\%$.

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

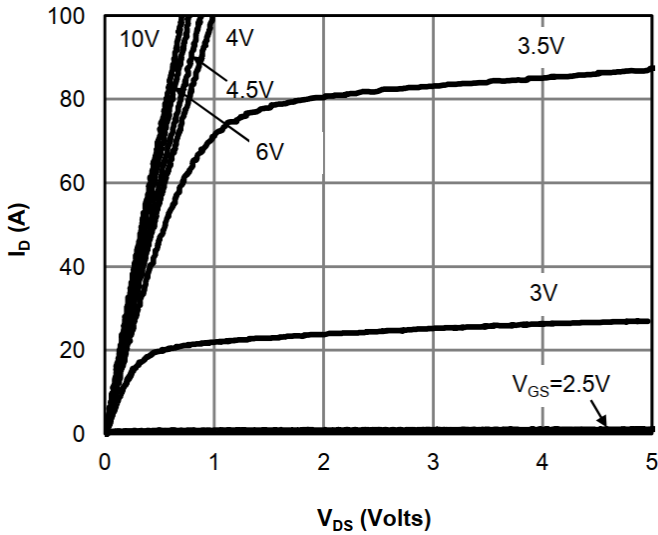


Figure 1: On-Region Characteristics

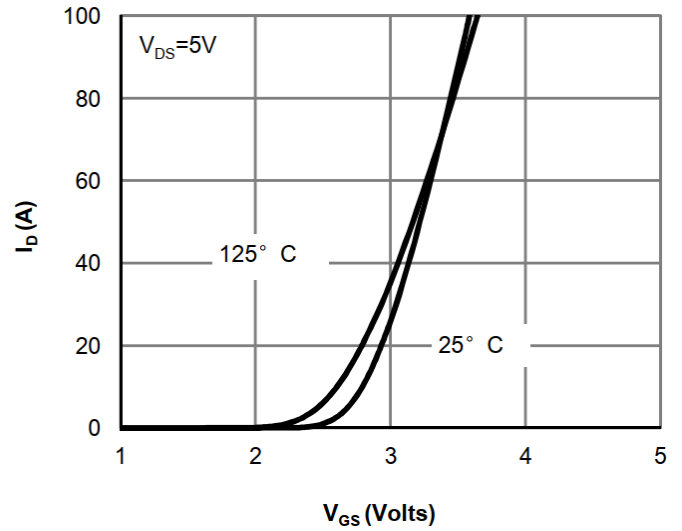


Figure 2: Transfer Characteristics

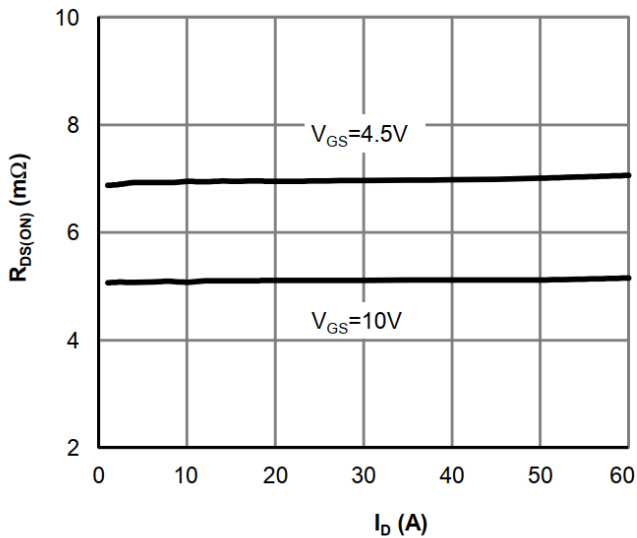


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

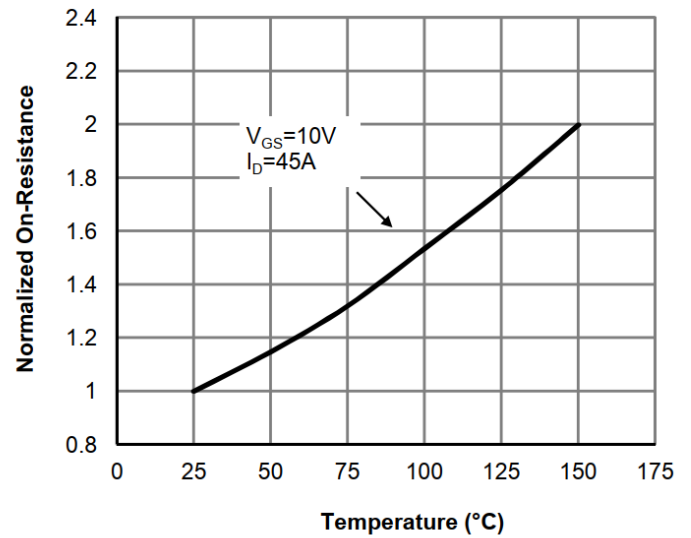


Figure 4: On-Resistance vs. Junction Temperature

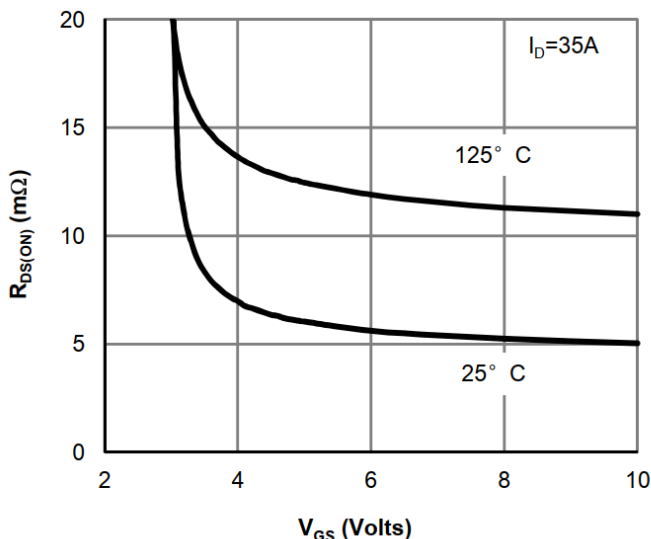


Figure 5: On-Resistance vs. Gate-Source Voltage

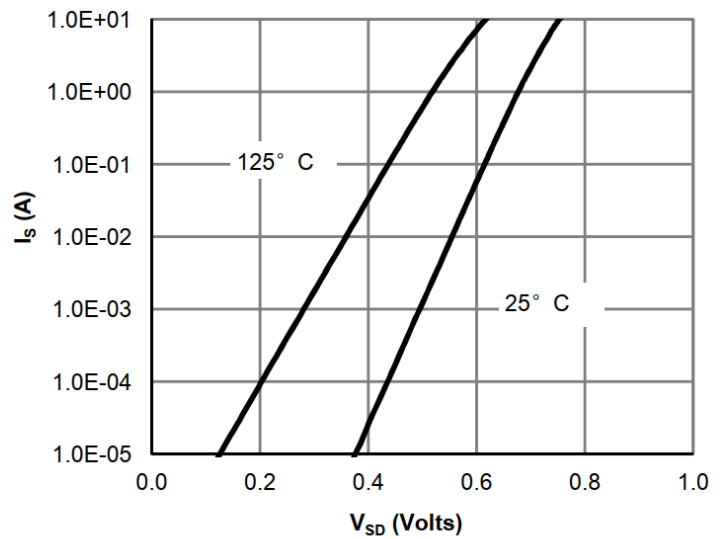


Figure 6: Body-Diode Characteristics

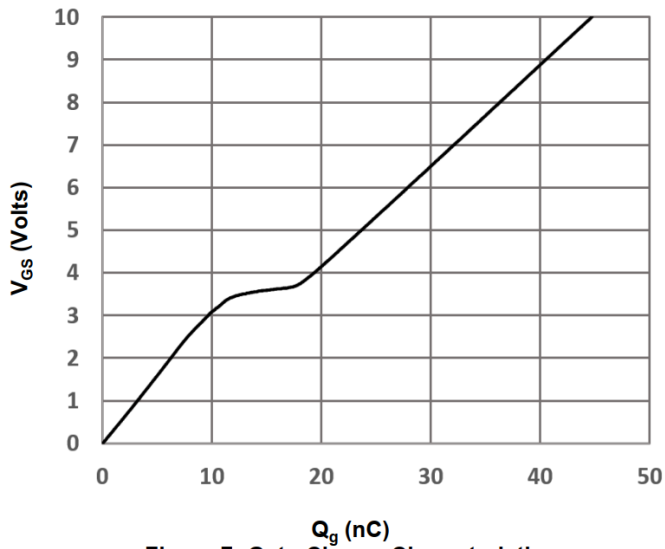


Figure 7: Gate-Charge Characteristics

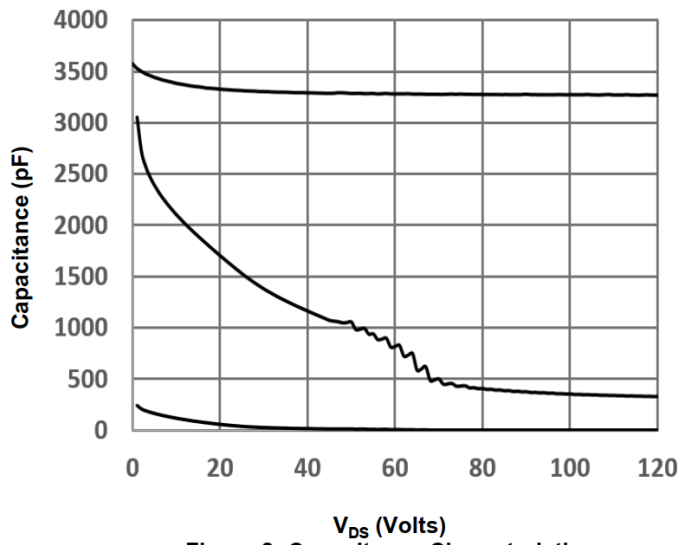


Figure 8: Capacitance Characteristics

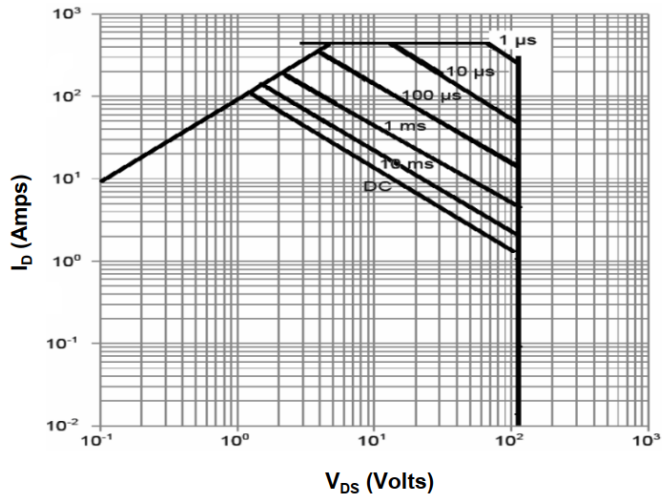
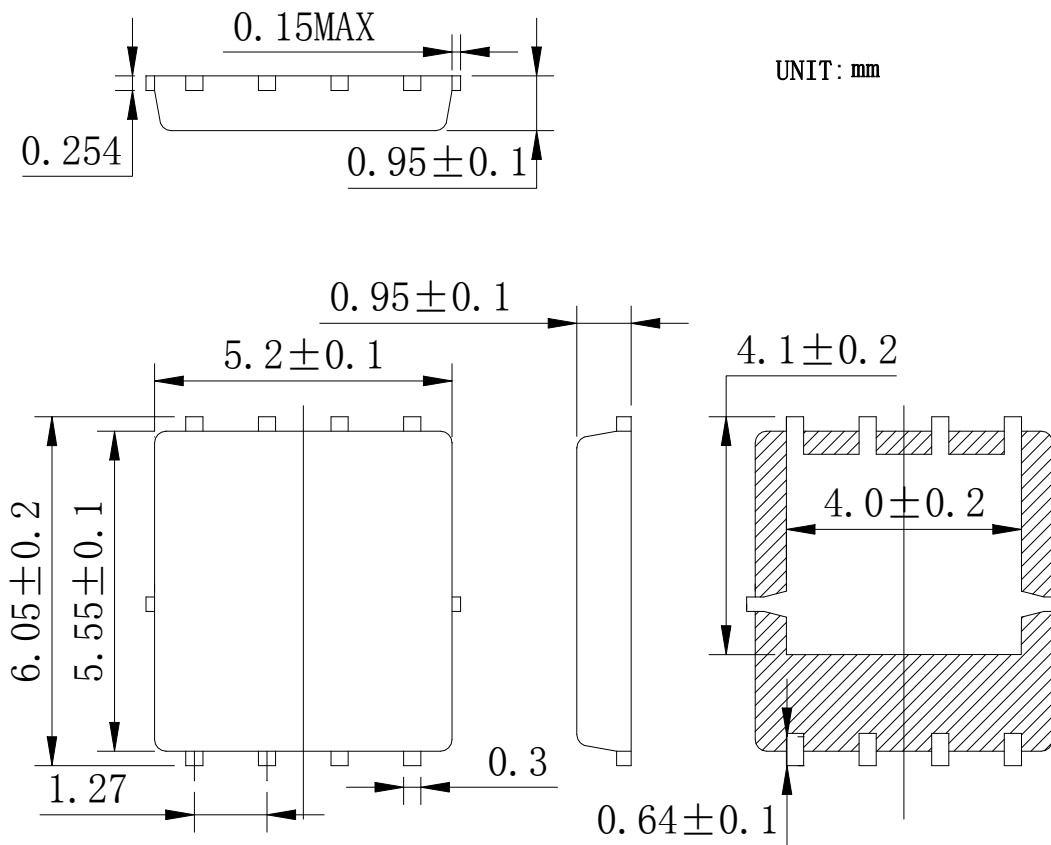


Figure 9: Maximum Forward Biased Safe Operating Area

DFN5×6-8 Package Information:



Marking Information:

①. Doingter LOGO

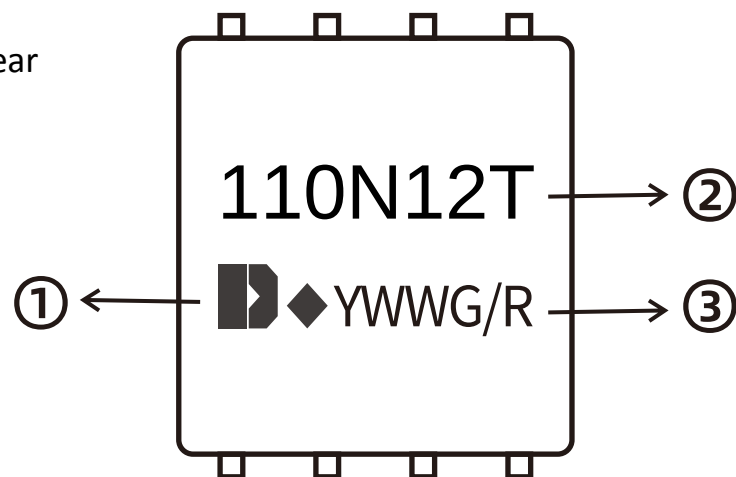
②. Part NO.

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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