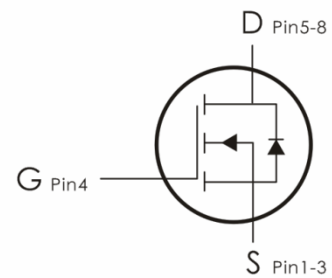
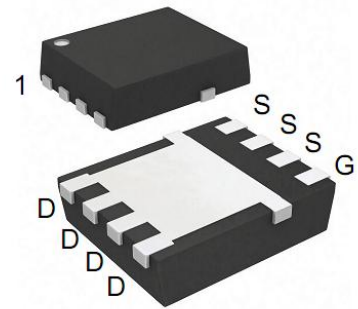


Description:

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) $V_{DS}=60V, I_D=130A, R_{DS(ON)}<3m\ \Omega @V_{GS}=10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra $R_{DS(ON)}$.
- 5) Excellent package for good heat dissipation.



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
DON130N06	130N06	DFN5*6-8	5000 pcs/Reel

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

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current- $T_C=25^\circ\text{C}$ ¹	130	A
	Continuous Drain Current- $T_C=100^\circ\text{C}$	95	
	Pulsed Drain Current ²	390	
E_{AS}	Single Pulse Avalanche Energy ⁵	80	mJ
P_D	Power Dissipation ³	140	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	$^\circ\text{C}$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	0.89	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance Junction to ambient ⁴	62	$^\circ\text{C}/\text{W}$

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	$V_{GS}=0V, I_D=250\ \mu\text{A}$	60	---	---	V	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS}=0V, V_{DS}=60V$	---	---	1	μA	
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0A$	---	---	± 100	nA	
On Characteristics							
$V_{GS(th)}$	GATE-Source Threshold Voltage	$V_{GS}=V_{DS}, I_D=250\ \mu\text{A}$	1	1.6	2.5	V	
$R_{DS(on)}$	Drain-Source On Resistance ²	$V_{GS}=10V, I_D=20A$	---	2.4	3	m Ω	
		$V_{GS}=4.5V, I_D=10A$	---	3.4	4		
Dynamic Characteristics⁴							
C_{iss}	Input Capacitance	$V_{DS}=25V, V_{GS}=0V, f=1\text{MHz}$	---	5377	---	pF	
C_{oss}	Output Capacitance						
C_{rss}	Reverse Transfer Capacitance						
Switching Characteristics⁴							
$t_{d(on)}$	Turn-On Delay Time	$V_{DD}=30V, I_D=25A, R_G=2\Omega$	---	22.5	---	ns	
t_r	Rise Time						
$t_{d(off)}$	Turn-Off Delay Time		$V_{GS}=10V$	---	80.3	---	ns
t_f	Fall Time						
Q_g	Total Gate Charge	$V_{GS}=10V, V_{DS}=30V, I_D=25A$	---	66.1	---	nC	
Q_{gs}	Gate-Source Charge						
Q_{gd}	Gate-Drain "Miller" Charge						
Drain-Source Diode Characteristics							
Symbol	Parameter	Conditions	Min	Typ	Max	Units	
V_{SD}	Source-Drain Diode Forward Voltage ³	$V_{GS}=0V, I_S=20A$	---	---	1.3	V	
I_S	Continuous Source Current	$V_D=V_{DS}=0V$	---	---	130	A	
I_{SM}	Pulsed Source Current						
T_{rr}	Reverse Recovery Time	$I_S=25\text{A}, di/dt=100\text{A}/\mu\text{s}$	---	68.3	---	NS	
Q_{rr}	Reverse Recovery Charge						

Notes:

- 1) Calculated continuous current based on maximum allowable junction temperature.
- 2) Repetitive rating; pulse width limited by max. junction temperature.
- 3) Pd is based on max. junction temperature, using junction-case thermal resistance.
- 4) The value of $R_{\theta JA}$ is measured with the device mounted on 1 in 2 FR-4 board with 2oz. Copper, in a still air environment with $T_a=25\text{ }^\circ\text{C}$.
- 5) $V_{DD}=50\text{ V}$, $R_G=25\text{ }\Omega$, $L=0.3\text{ mH}$, starting $T_j=25\text{ }^\circ\text{C}$.

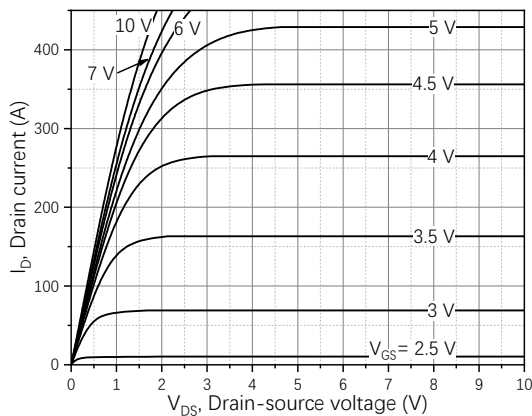
Typical Characteristics: ($T_c=25\text{ }^\circ\text{C}$ unless otherwise noted)


Figure 1, Typ. output characteristics

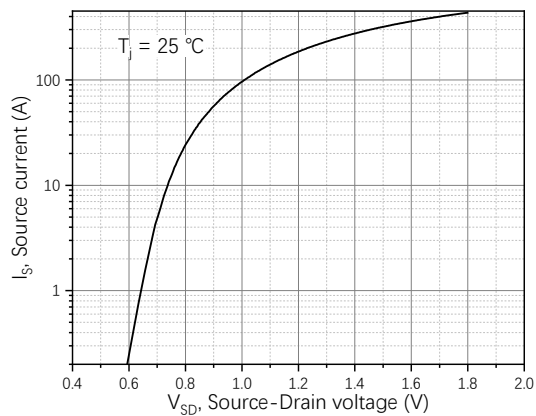


Figure 2, Typ. transfer characteristics

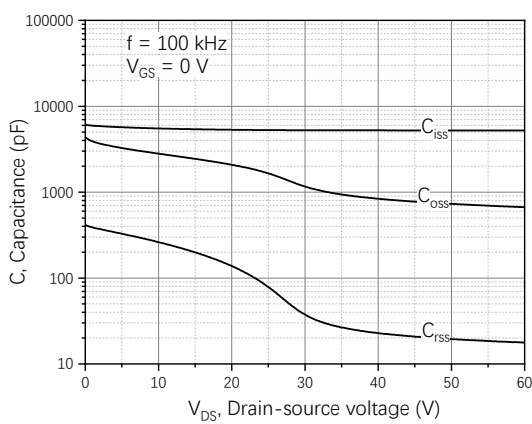


Figure 3, Typ. capacitances

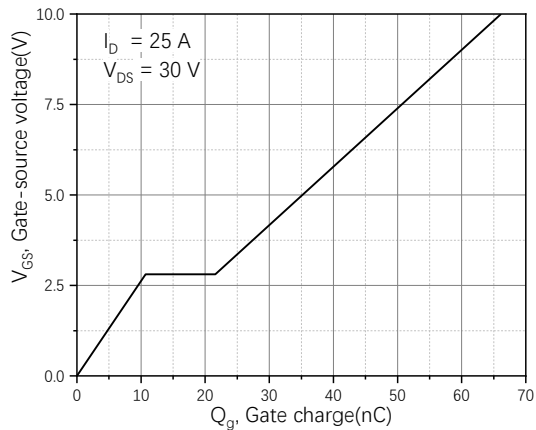


Figure 4, Typ. gate charge

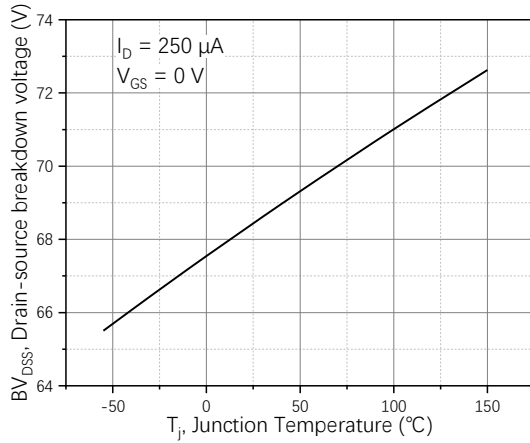


Figure 5, Drain-source breakdown voltage

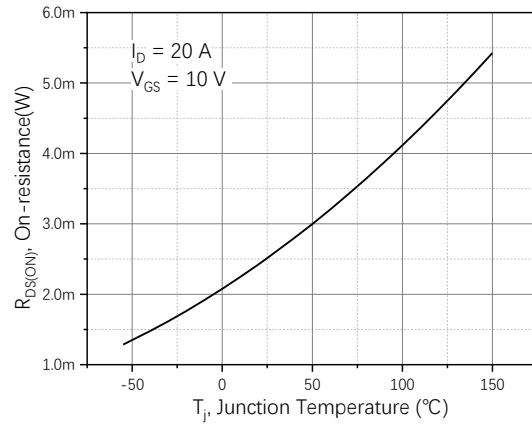


Figure 6, Drain-source on-state resistance

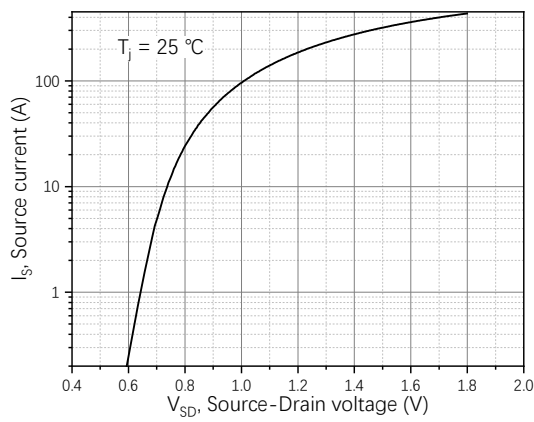


Figure 7, Forward characteristic of body diode

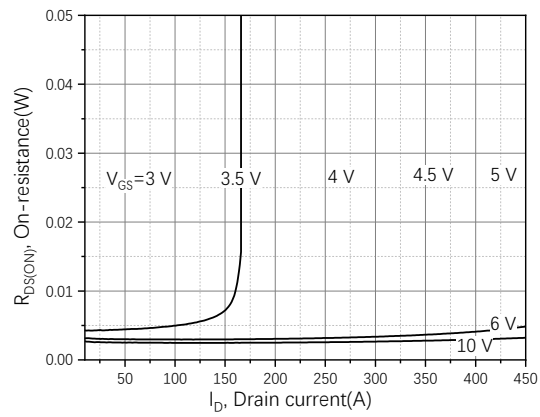


Figure 8, Drain-source on-state resistance

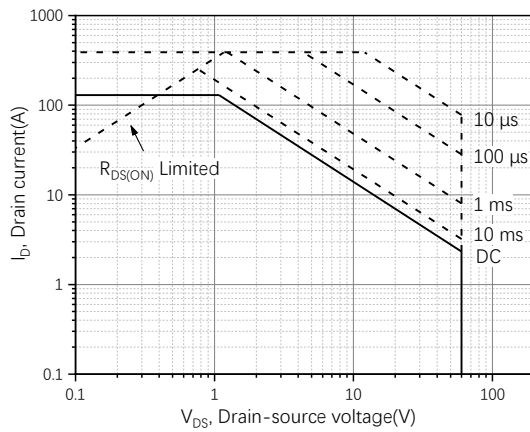
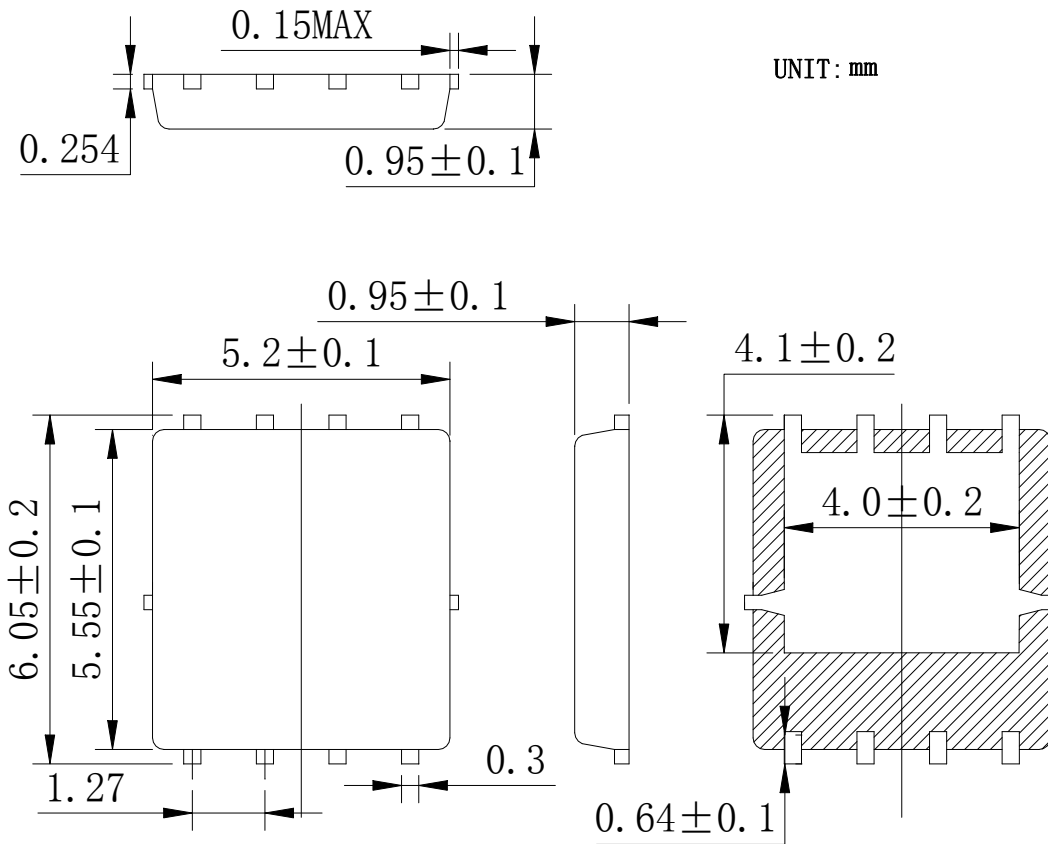


Figure 9, Safe operation area $T_C=25\text{ }^\circ\text{C}$

DFN5x6-8 Package Information:



Marking Information:

①. Doingter LOGO

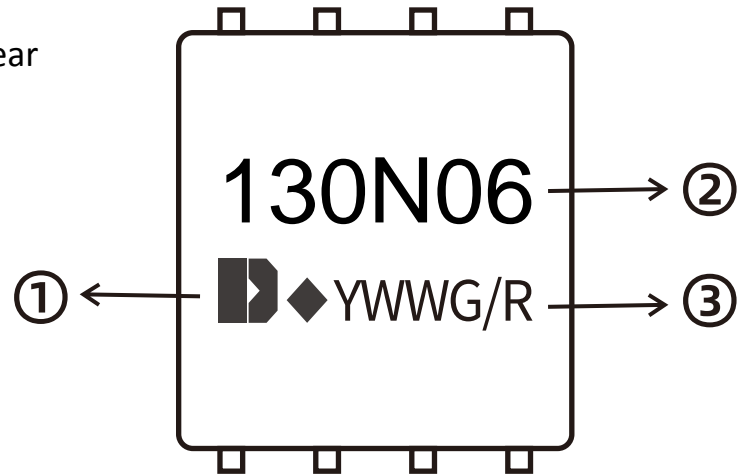
②. Part NO.

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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