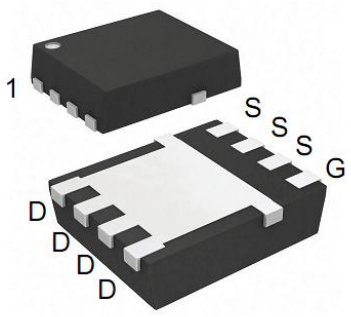
Description：

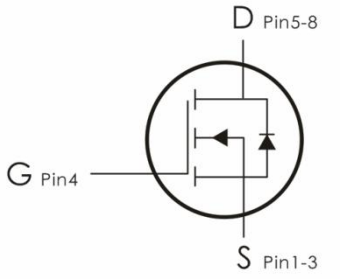
This N-Channel MOSFET uses advanced SGT technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.



Features：

1) V_{DS}=120V,I_D=110A,$R_{DS(ON)}$<6mΩ @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.



Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
NHI006TG	HI006T	DFN5*6-8	5000 pcs/Reel

Absolute Maximum Ratings： (T_C=25℃ 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 Curren	110	A
	Continuous Drain Current-T_C=100℃	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	℃

Thermal Characteristics：

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

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	120	---	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=120V	---	---	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	1.5	1.9	2.5	V
$R_{DS(ON)}$	Drain-Source On Resistance[3]	V_{GS}=10V,I_D=45A	---	5	6	mΩ
		V_{GS}=4.5V,I_D=45A	---	6.2	8	mΩ
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}=3Ω ,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	VD=VG=0V	---	---	110	A
I_{SM}	Pulsed Drain Current		---	---	440	A
Trr	Reverse Recovery Time	I_F=35A T_J=25℃	---	80	---	ns
Qrr	Reverse Recovery Charge	dI/dt=100A/us	---	180	---	nc

Notes:

1.T_J=+25℃ to +150℃ .

2.Repetitive rating; pulse width limited by maximum junction temperature.

3.Pulse width≤380μs; duty cycle≤2%.

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

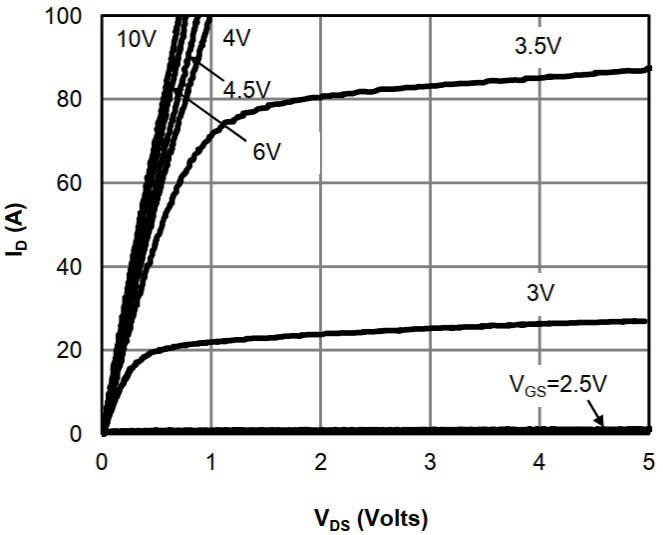


Figure 1: On-Region Characteristics

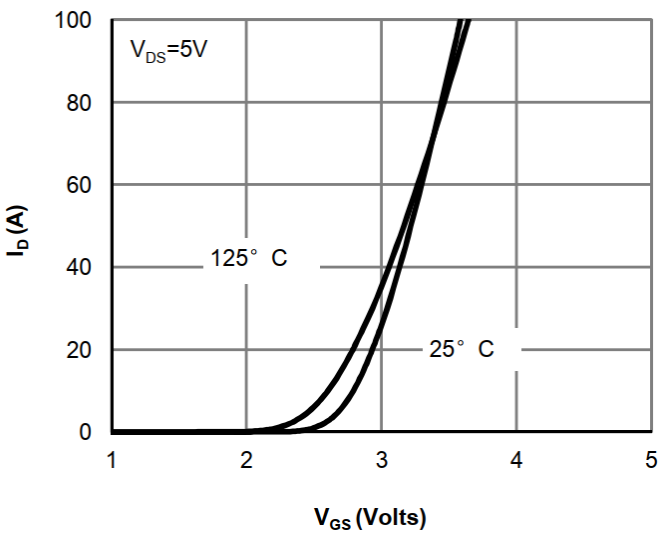


Figure 2: Transfer Characteristics

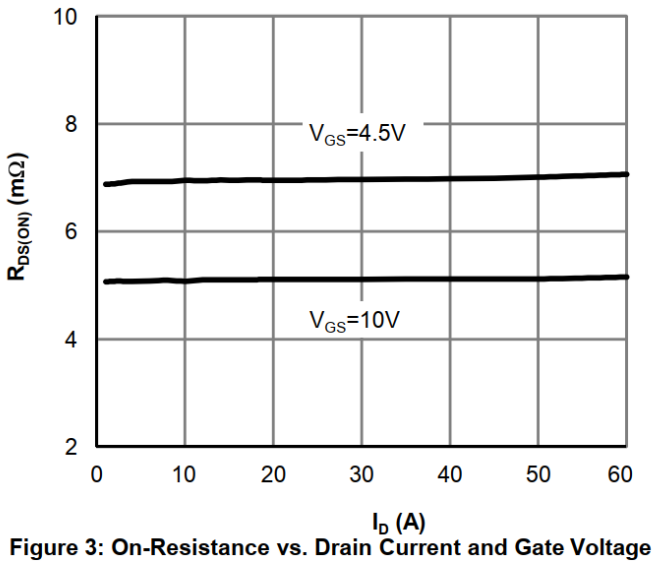


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

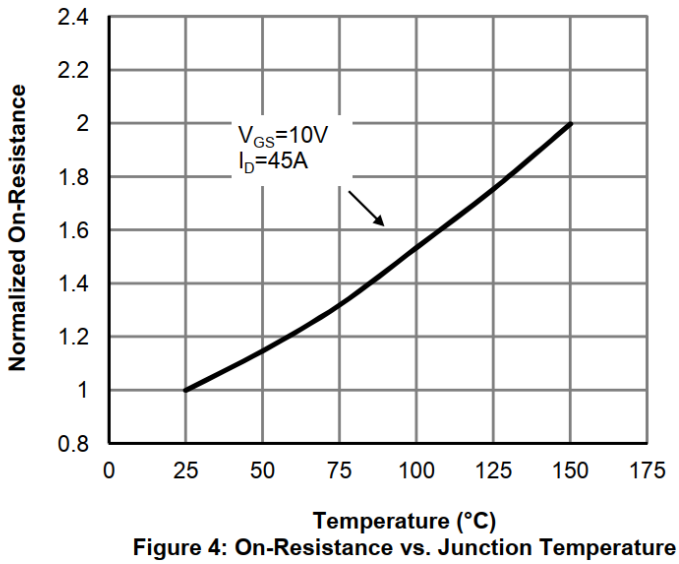


Figure 4: On-Resistance vs. Junction Temperature

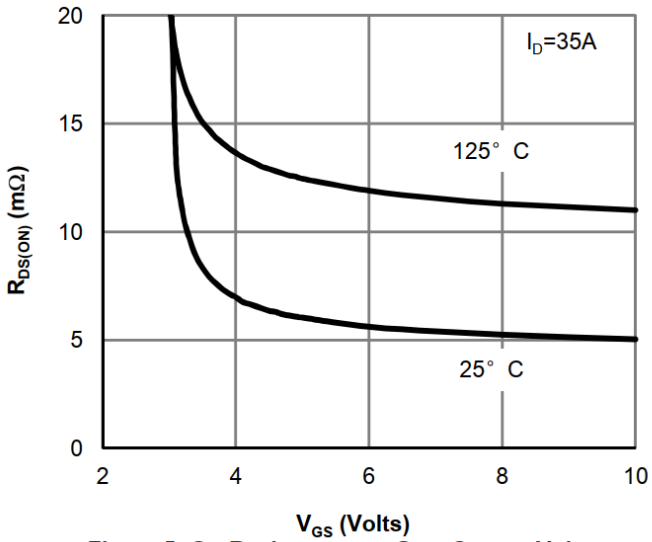


Figure 5: On-Resistance vs. Gate-Source Voltage

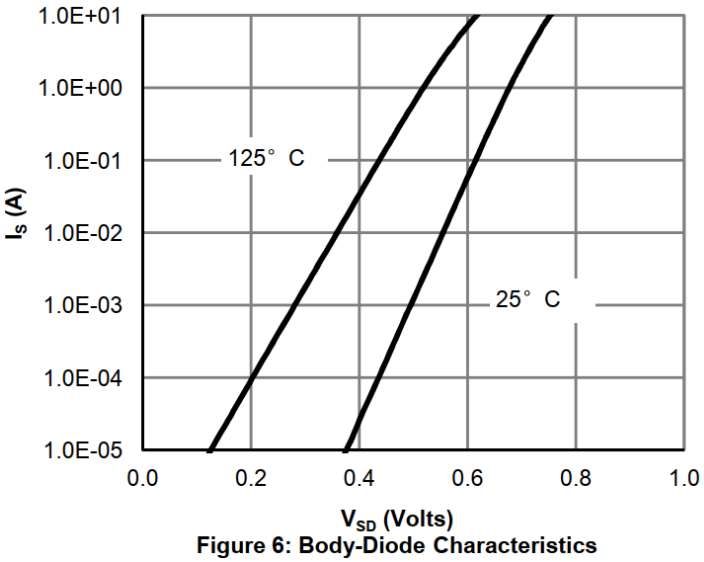


Figure 6: Body-Diode Characteristics

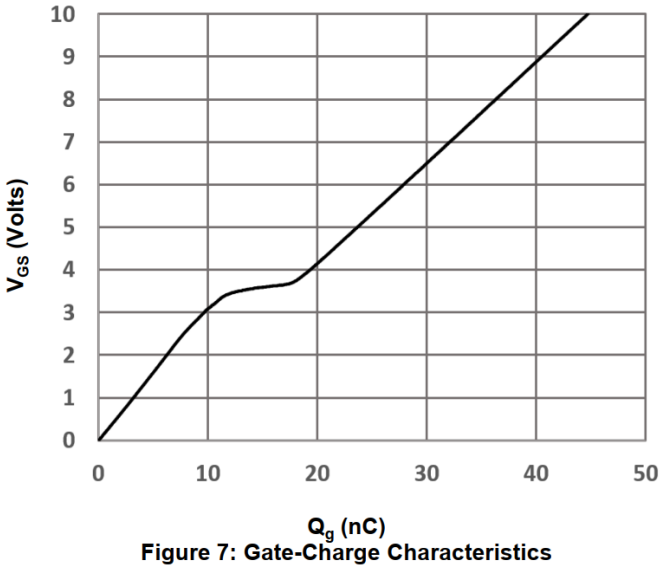


Figure 7: Gate-Charge Characteristics

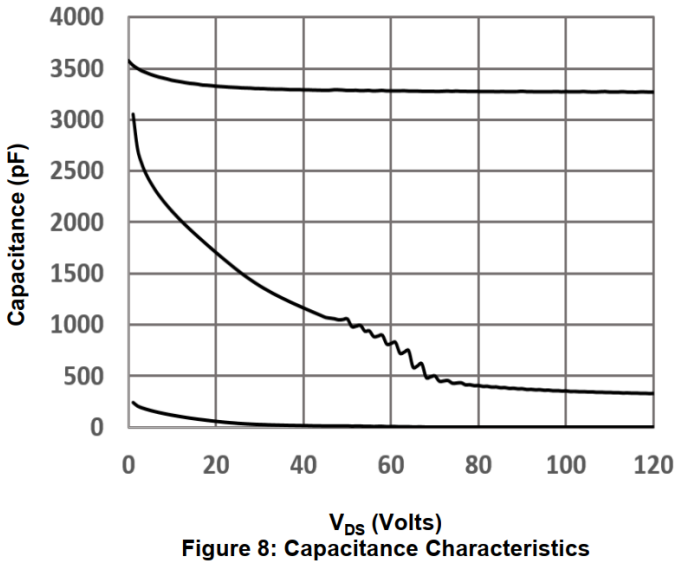


Figure 8: Capacitance Characteristics

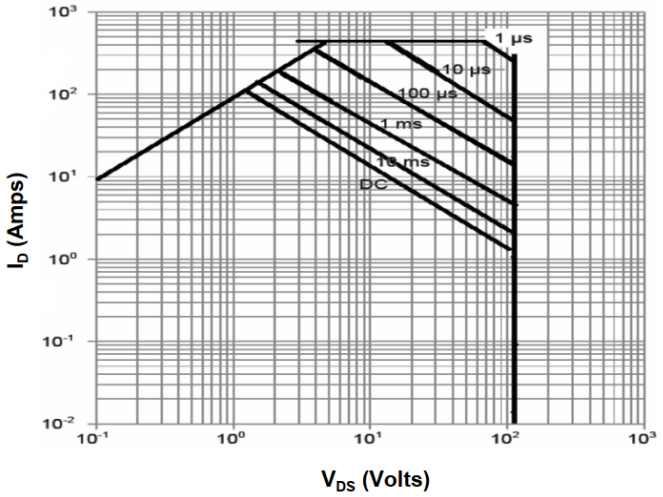
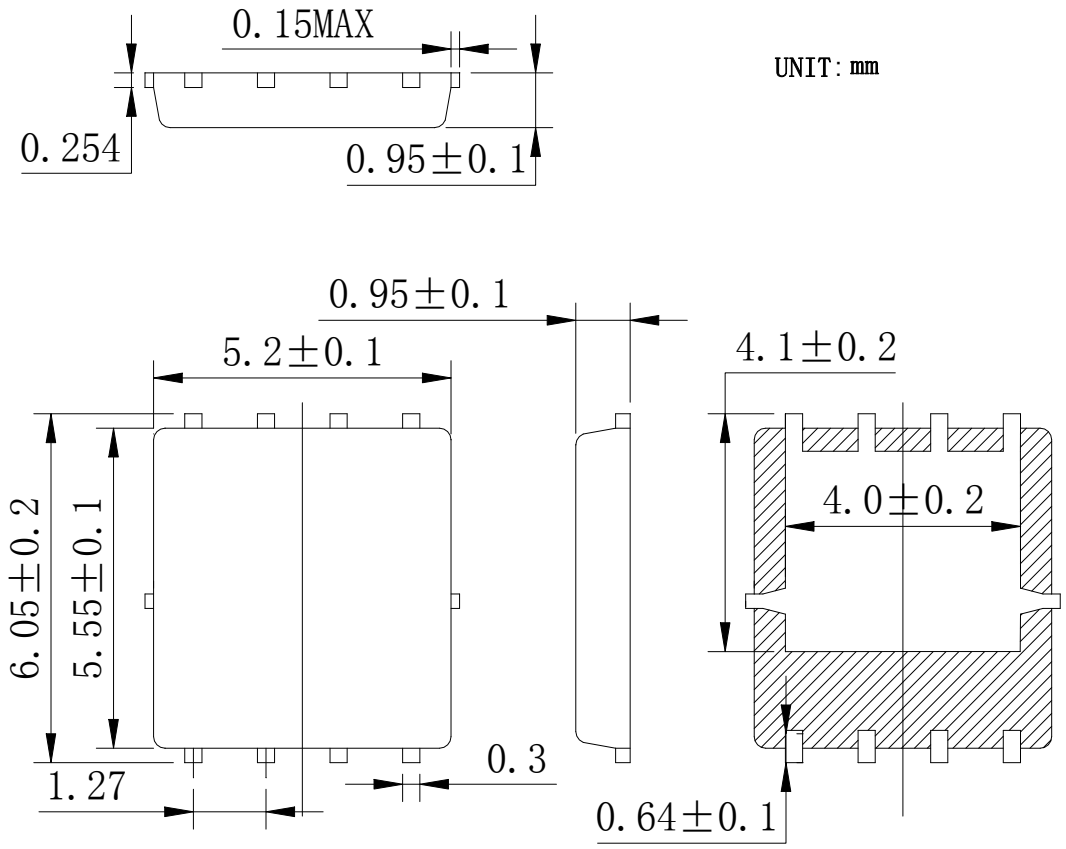


Figure 9: Maximum Forward Biased Safe Operating Area

DFN5×6-8 Package Information：



Marking Information：

①. Doingter LOGO

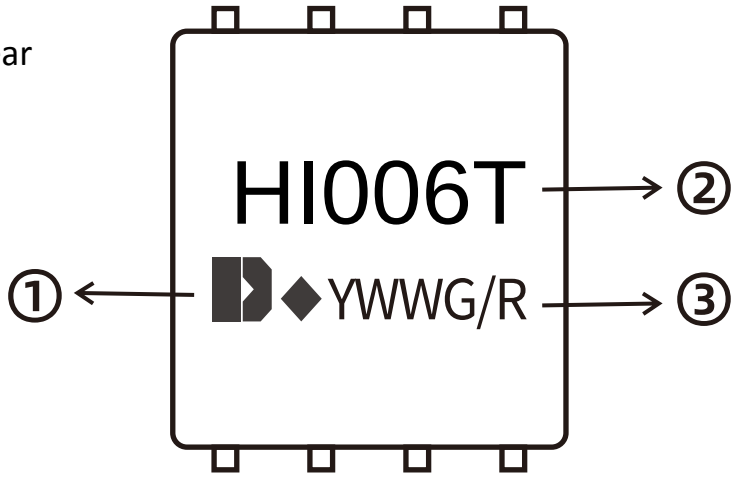
②. Part NO.

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)



Attention :

- Information furnished in this document is believed to be accurate and reliable. However, Shenzhen Doingter Semiconductor Co.,Ltd. assumes noresponsibility for the consequences of use without consideration for such information nor use beyond it.
- Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Shenzhen Doingter complies with the agreement. Products and information provided in this document have no infringement of patents.
- Shenzhen Doingter assumes noresponsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied. Is a registered trademark of Shenzhen Doingter Semiconductor Co., Ltd. Copyright © 2013 Shenzhen DoingterSemiconductor Co.,Ltd. Printed All rights reserved.