

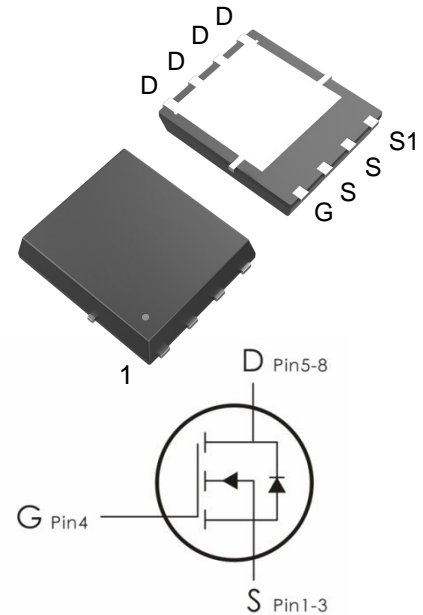
Description:

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) $V_{DS}=30V, I_D=80A, R_{DS(on)} < 5m\Omega @ V_{GS}=10V$
- 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
DON80N03	80N03	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	80	A
	Continuous Drain Current- $T_C=100^\circ C$	51	
I_{DM}	Pulsed Drain Current ¹	320	
P_D	Power Dissipation ⁴	0.59	W
E_{AS}	Single pulse avalanche energy ²	88	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+175	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case ¹	1.7	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient ¹	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-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} =30V	---	---	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	1.6	2.5	V
R _{DS(ON)}	Drain-Source On Resistance ³	V _{GS} =10V, I _D =20A	---	4	5	m Ω
		V _{GS} =4.5V, I _D =4A	---	6.5	8	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1MHz	---	1159	---	pF
C _{oss}	Output Capacitance		---	199	--	
C _{rss}	Reverse Transfer Capacitance		---	179	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time ^{3,4}	V _{DS} =15V, I _D =15A, R _G =3.3 Ω ,V _{GS} =10V	---	7.4	---	ns
t _r	Rise Time ^{3,4}		---	14.4	---	ns
t _{d(off)}	Turn-Off Delay Time ^{3,4}		---	35.1	---	ns
t _f	Fall Time ^{3,4}		---	9.5	---	ns
Q _g	Total Gate Charge ^{3,4}	V _{GS} =4.5V, V _{DS} =15V, I _D =20A	---	11	---	nC
Q _{gs}	Gate-Source Charge ^{3,4}		---	1.84	---	nC
Q _{gd}	Gate-Drain “Miller” Charge ^{3,4}		---	6.7	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage ³	V _{GS} =0V, I _S =1A	---	---	1	V
I _S	Continuous Drain Curren	V _D =V _G =0V	---	---	80	A
I _{SM}	Pulsed Drain Current		---	---	320	A

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.
3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production
5. $V_{DD}=25V, V_{GS}=10V, L=0.1mH, I_{AS}=42A, R_G=25\Omega$, Starting $T_J=25^\circ C$.

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

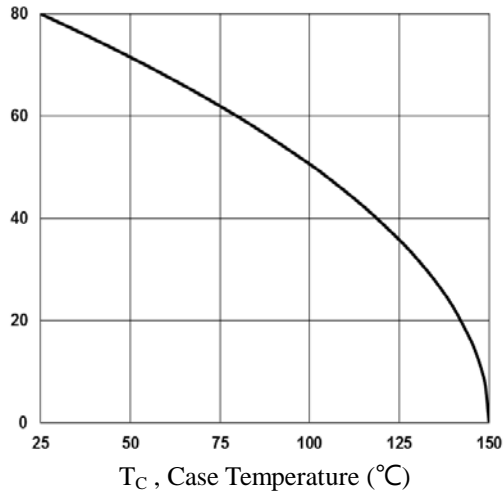


Fig.1 Continuous Drain Current vs. T_C

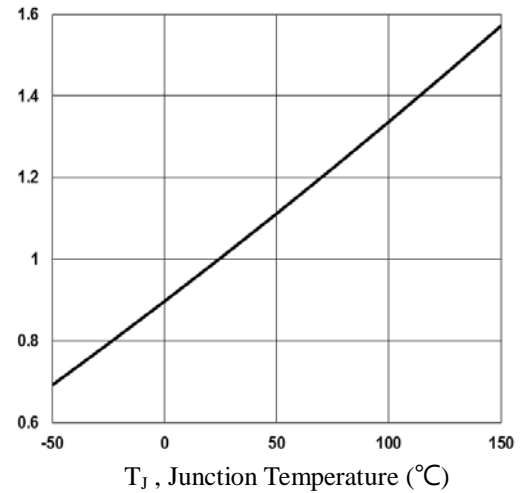


Fig.2 Normalized $R_{DS(on)}$ vs. T_J

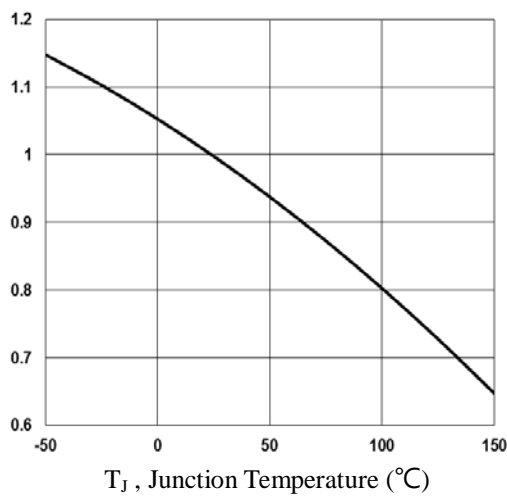


Fig.3 Normalized V_{th} vs. T_J

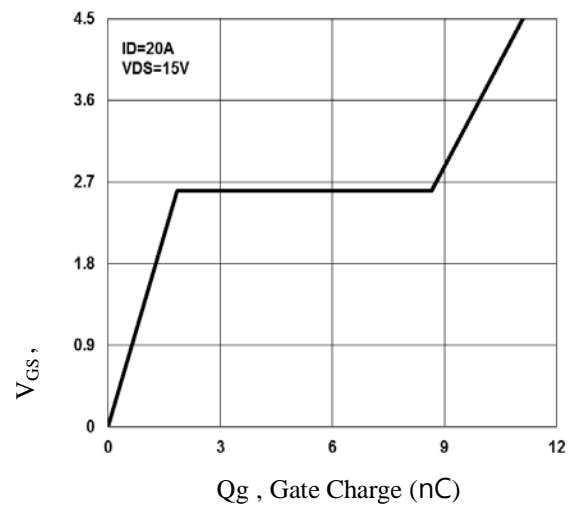


Fig.4 Gate Charge Waveform

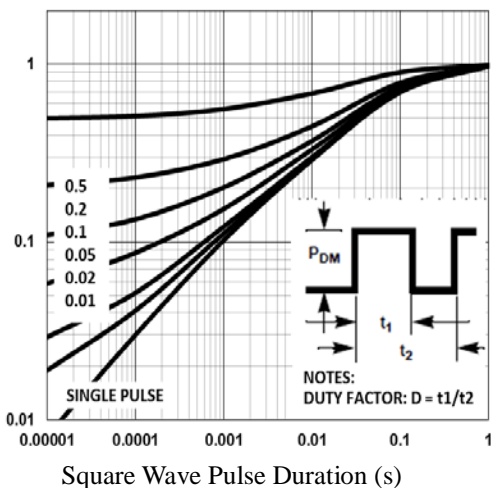


Fig.5 Normalized Transient Impedance

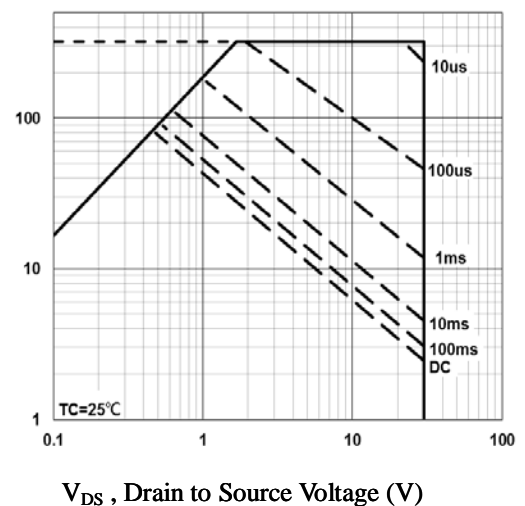
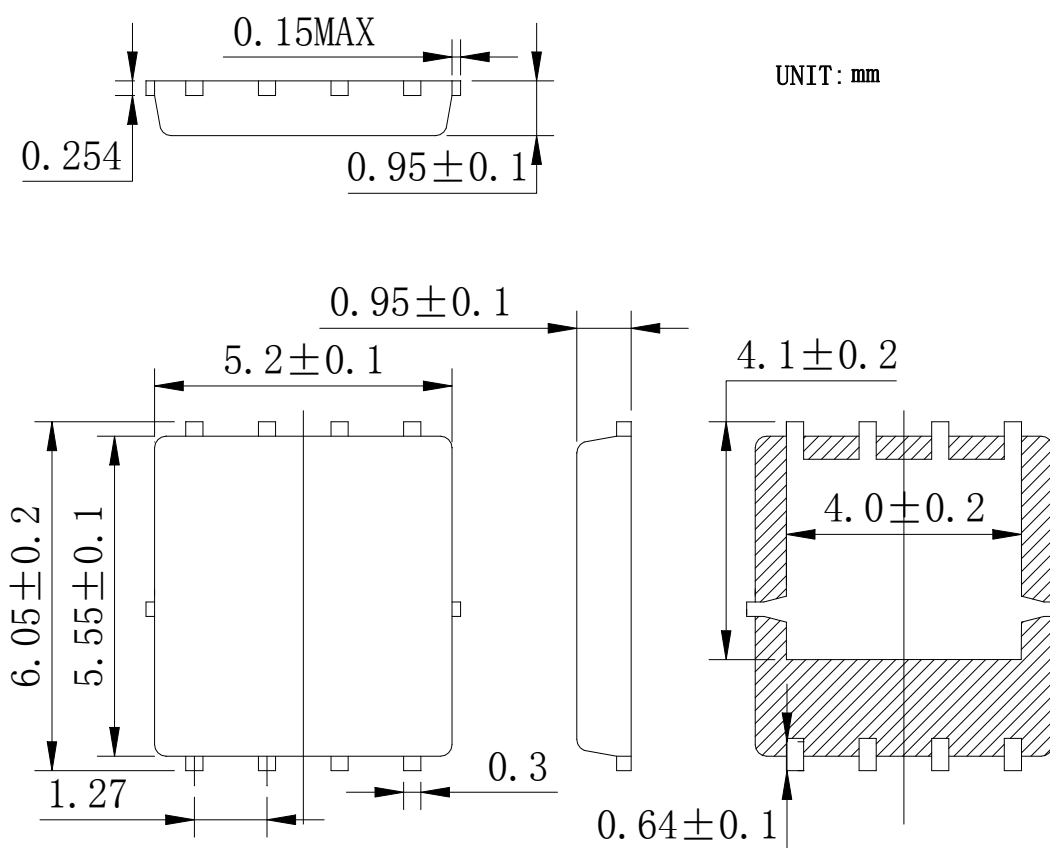


Fig.6 Maximum Safe Operation Area

DFN5x6-8 Package Information:



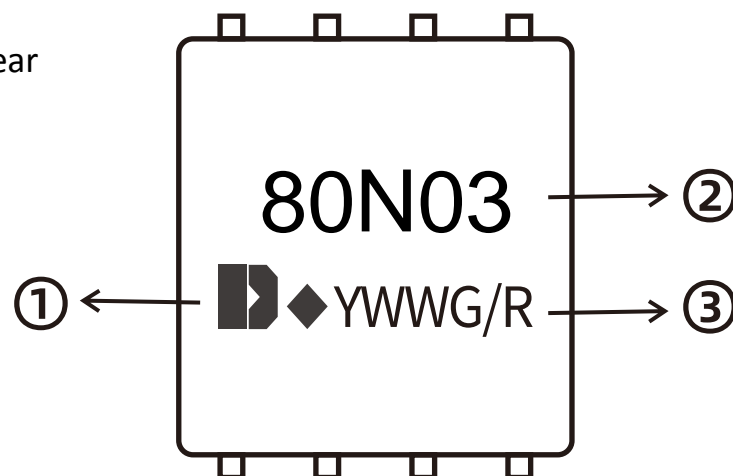
Package Information:

- 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)

**Previous Version**

Version	Date	Subjects (major changes since last revision)
1.0	2024-04-1	Release of final version

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