

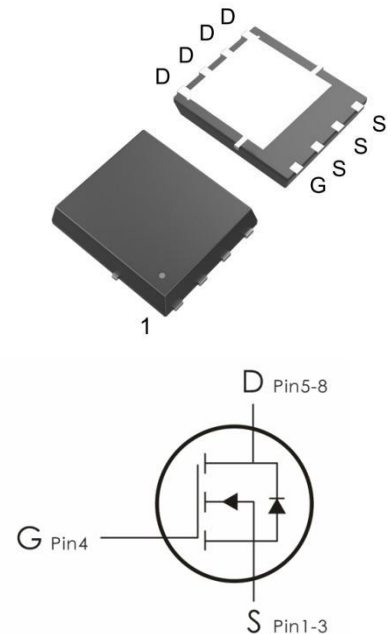
Description:

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) $V_{DS}=40V, I_D=260A, R_{DS(on)} < 0.9m\Omega @ V_{GS}=10V$ (Type: $0.71m\Omega$)
- 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.
- 6) MSL3



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
DON260N04T	260N04T	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	40	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current	260	A
	Continuous Drain Current- $T_C=100^\circ C$	210	
I_{DM}	Pulsed Drain Current ¹	380	
P_D	Power Dissipation	200	W
E_{AS}	Single pulse avalanche energy ²	368	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	0.4	$^\circ C/W$

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	40	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =40V	---	---	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	1.7	2.4	V
R _{DS(ON)}	Drain-Source On Resistance ³	V _{GS} =10V, I _D =50A	---	0.71	0.9	m Ω
		V _{GS} =4.5V, I _D =50A	---	1	1.3	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, f=1MHz	---	5890	---	pF
C _{oss}	Output Capacitance		---	2470	--	
C _{rss}	Reverse Transfer Capacitance		---	147	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =20V, I _D =20A, R _{ENG} =1.6 Ω ,V _{GS} =10V	---	31.5	---	ns
t _r	Rise Time		---	44	---	ns
t _{d(off)}	Turn-Off Delay Time		---	84	---	ns
t _f	Fall Time		---	32	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =20V, I _D =20A	---	131	---	nC
Q _{gs}	Gate-Source Charge		---	31	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	33.6	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{SD} =115A	---	---	1.2	V
I _S	Continuous Drain Curren	V _D =V _G =0V	---	---	260	A
I _{SM}	Pulsed Drain Current		---	---	380	A
Trr	Reverse Recovery Time	I _F =20A,	---	99	---	ns
Qrr	Reverse Recovery Charge	dI/dt=100A/us	---	62	---	nC

Notes:

1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
2. EAS condition : $T_J=25^{\circ}\text{C}$, $V_{DD}=20\text{V}$, $V_G=10\text{V}$, $L=0.5\text{mH}$
3. Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 0.5\%$

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

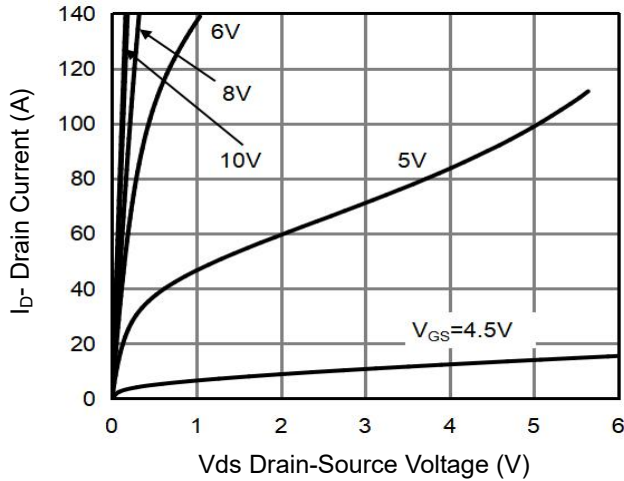


Figure 1 Output Characteristics

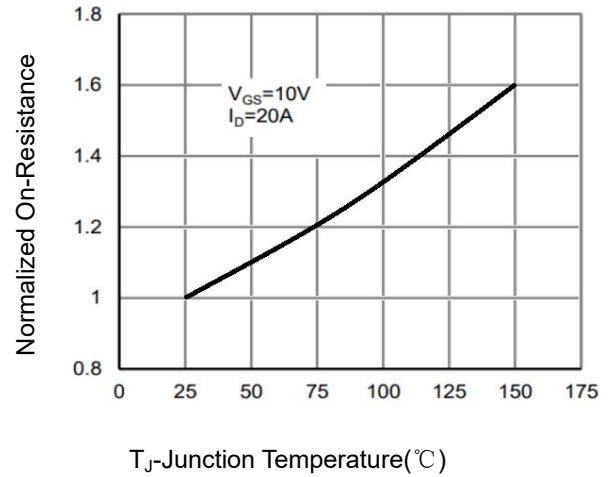


Figure 4 Rdson-Junction Temperature

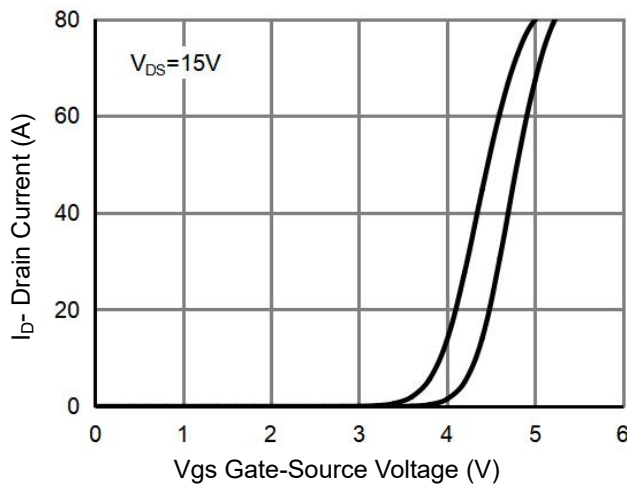


Figure 2 Transfer Characteristics

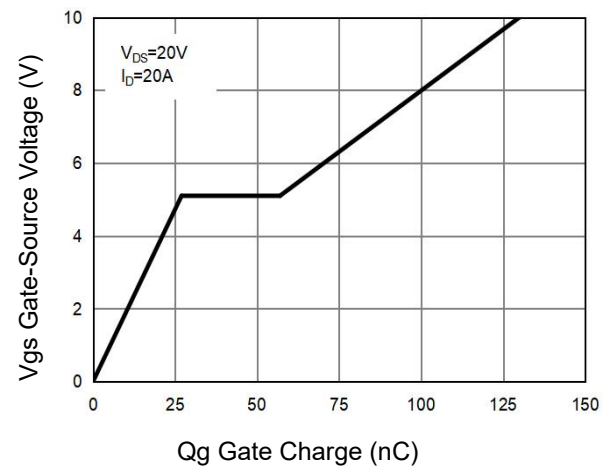


Figure 5 Gate Charge

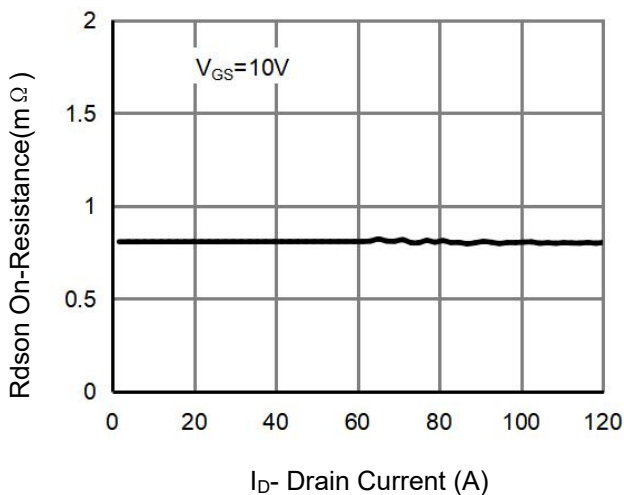


Figure 3 Rdson- Drain Current

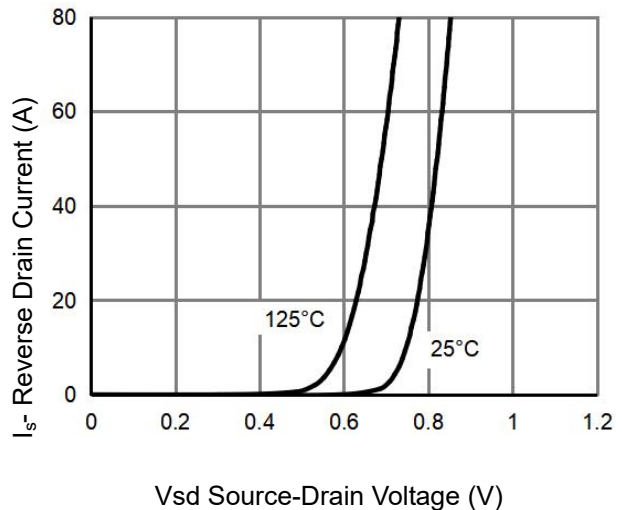


Figure 6 Source- Drain Diode Forward

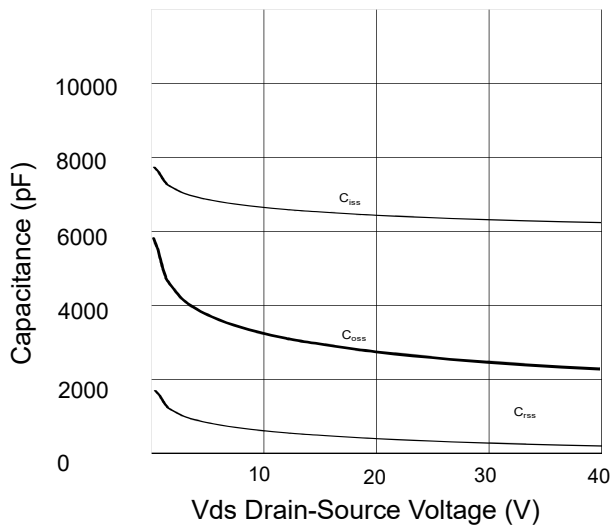


Figure 7 Capacitance vs Vds

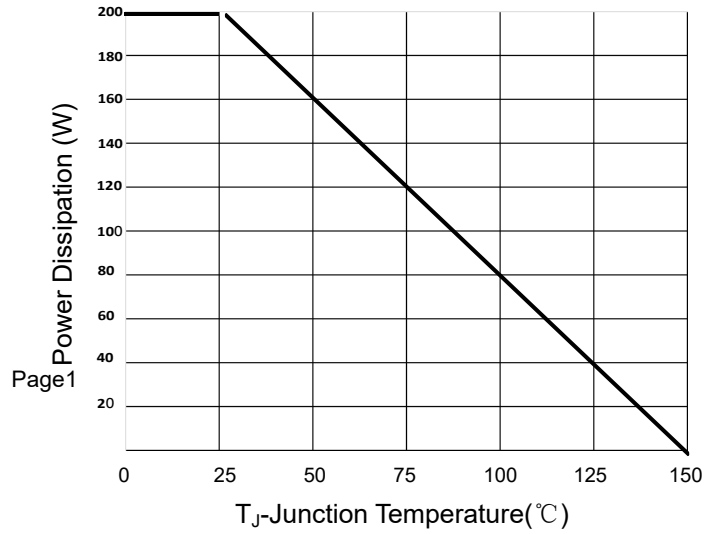


Figure 9 Power De-rating

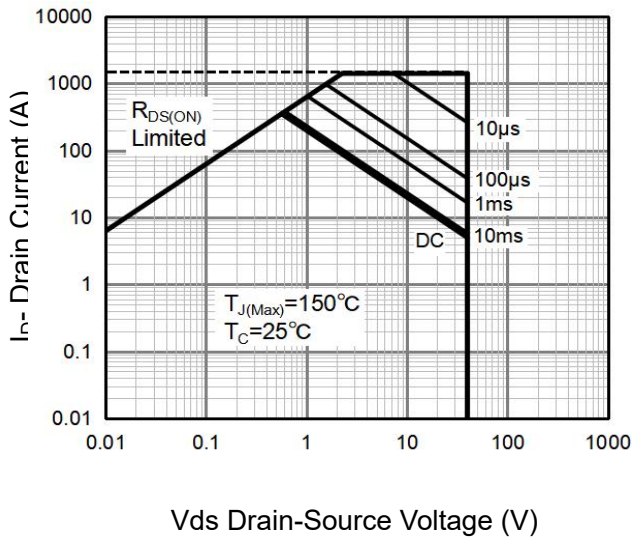


Figure 8 Safe Operation Area

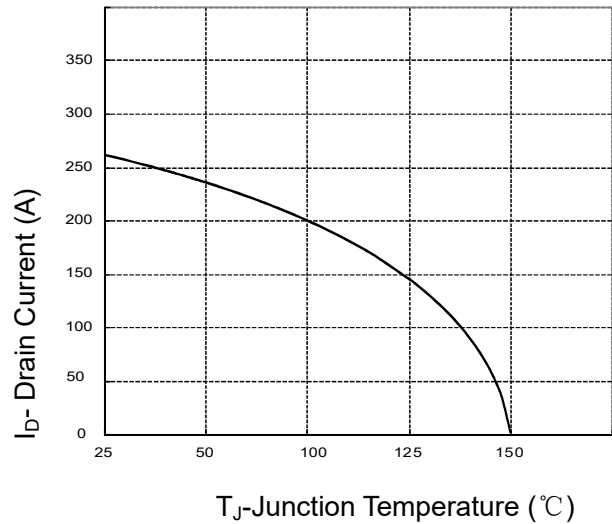


Figure 10 Current De-rating

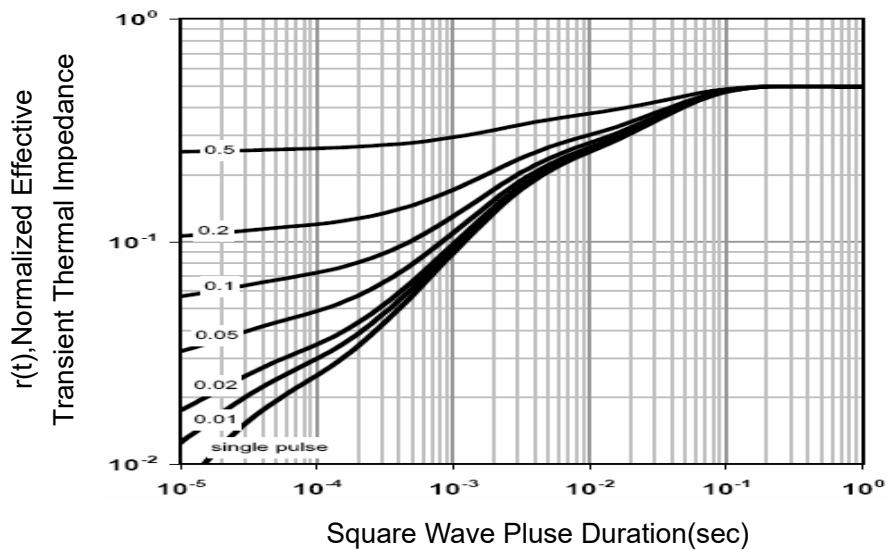
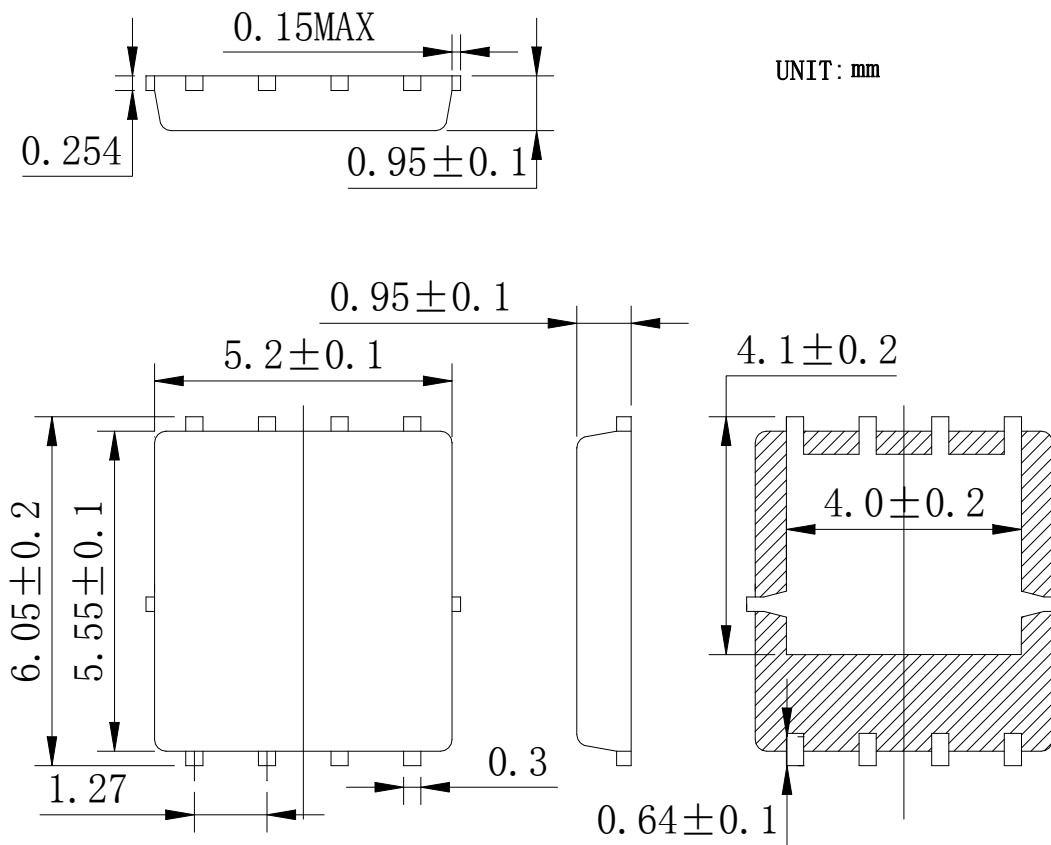


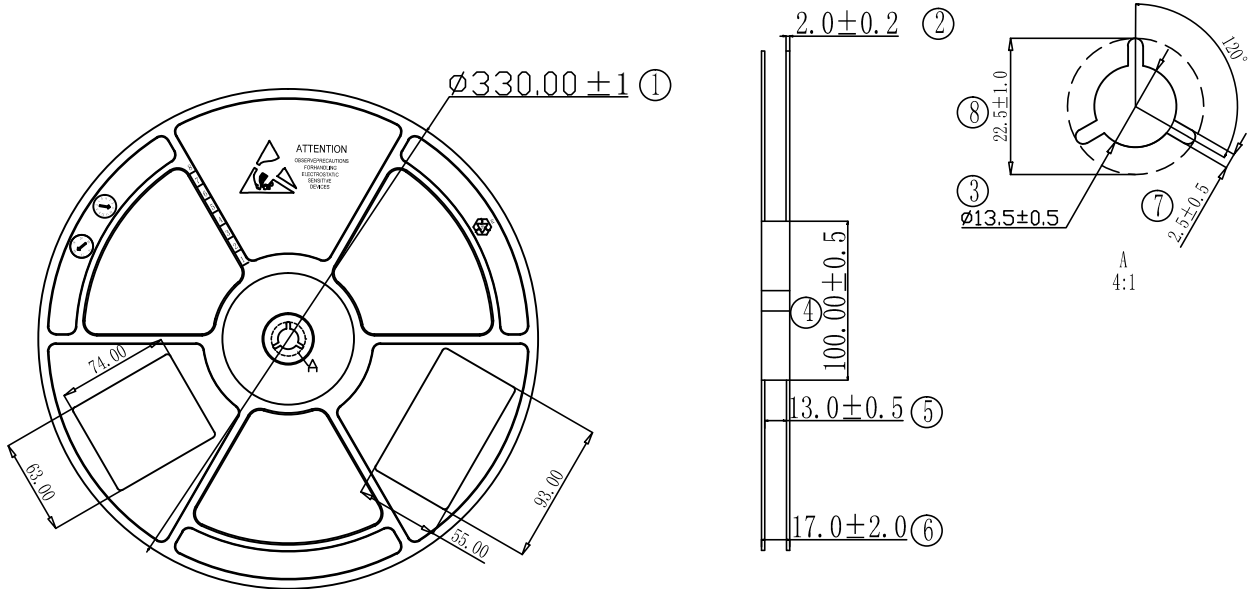
Figure 11 Normalized Maximum Transient Thermal Impedance

DFN5×6-8 Package Information:

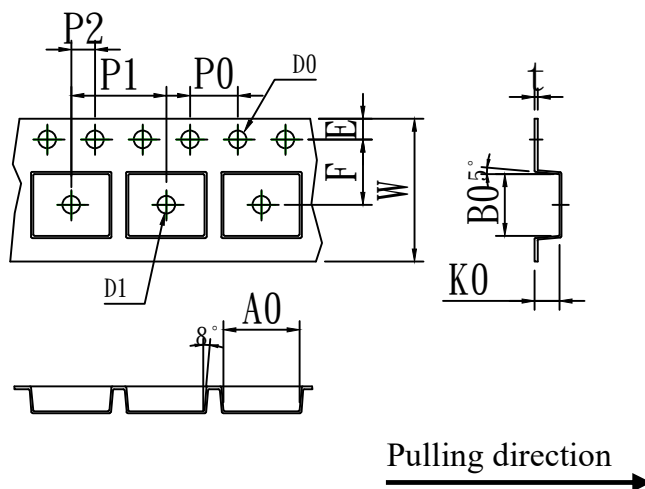


Tape & Reel Information

Dimensions in mm



Symbol	A0	B0	K0	D0	D1	P0	P1	10*P0
Spec	6.15 $\pm$ 0.10	5.40 $\pm$ 0.10	1.30 $\pm$ 0.10	1.55 $\pm$ 0.10	1.55 $\pm$ 0.10	4.00 $\pm$ 0.10	8.00 $\pm$ 0.10	40.00 $\pm$ 0.10
Symbol	W	E	F	P2	t			
Spec	12.00 $\pm$ 0.10	1.75 $\pm$ 0.10	5.50 $\pm$ 0.10	2.00 $\pm$ 0.10	0.20 $\pm$ 0.05			



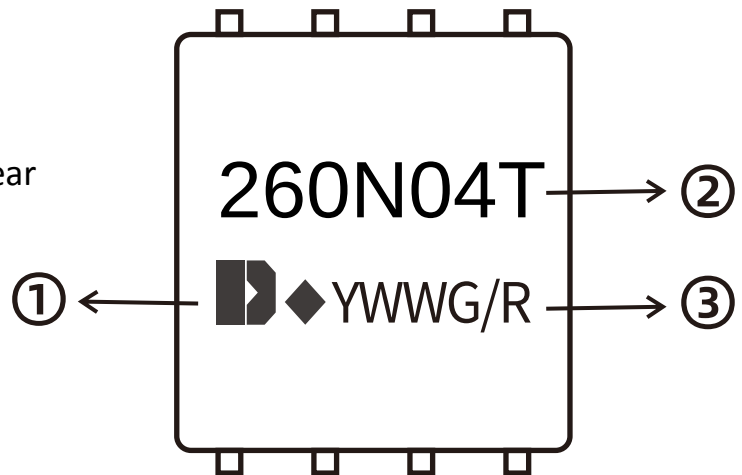
Marking Information:

- 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)



Previous Version

Version	Date	Subjects (major changes since last revision)
1.0	2024-09-22	Release of final version

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