# DOINGTER

NE015TPG

Description：

This P-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=-55A,$R_{DS(ON)}$<15mΩ @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.
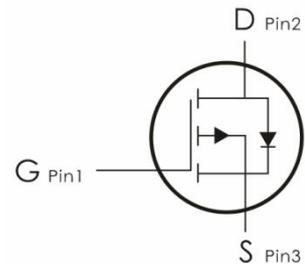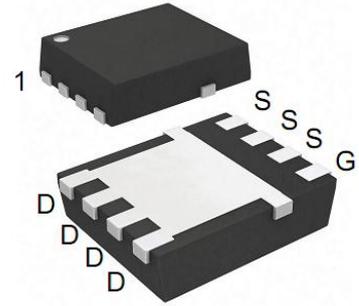
Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
NE015TPG	E015TP	DFN5*6-8	5000 pcs/Reel

Absolute Maximum Ratings： (T$_C$=25℃ 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	-55	A
	Continuous Drain Current-T$_C$=100℃	-35	
I_{DM}	Pulsed Drain Current[1]	-220	
P_D	Power Dissipation	100	W
E_{AS}	Single pulse avalanche energy [2]	337	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	1.25	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	60	℃/W

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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$_D$=250 μ A	-60	---	---	V
I$_{DSS}$	Zero Gate Voltage Drain Current	V$_{GS}$=0V, V$_{DS}$=-60V	---	---	-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	-1.3	-1.8	-2.3	V
R$_{DS(ON)}$	Drain-Source On Resistance	V$_{GS}$=-10V,I$_D$=-20A	---	11	15	m Ω
		V$_{GS}$=-4.5V,I$_D$=-10A	---	15	20	m Ω
Dynamic Characteristics						
C$_{iss}$	Input Capacitance		---	2498	---	
C$_{oss}$	Output Capacitance	V$_{DS}$=-30V, V$_{GS}$=0V, f=1MHz	---	459	--	pF
C$_{rss}$	Reverse Transfer Capacitance		---	9.87	---	
Switching Characteristics						
t$_{d(on)}$	Turn-On Delay Time		---	21	---	ns
t$_r$	Rise Time	V$_{DS}$=-30V, I$_D$=-10A,	---	26.25	---	ns
t$_{d(off)}$	Turn-Off Delay Time	R$_G$=3 Ω ,V$_{GS}$=-10V	---	63	---	ns
t$_f$	Fall Time		---	31.5	---	ns
Q$_g$	Total Gate Charge		---	39.9	---	nc
Q$_{gs}$	Gate-Source Charge	V$_{GS}$=-10V, V$_{DS}$=-30V, I$_D$=-10A	---	7.2	---	nc
Q$_{gd}$	Gate-Drain "Miller" Charge		---	5.2	---	nc
Drain-Source Diode Characteristics						
I$_S$	Continuous Drain Curren	VD=VG=0V	---	---	-55	A
I$_{SM}$	Pulsed Drain Current		---	---	-220	A
Trr	Reverse Recovery Time		---	50	---	ns
Qrr	Reverse Recovery Charge	I$_F$=10A,T$_J$=25,dI/dt=100A/us	---	80	---	nc
V$_{SD}$	Diode Forward Voltage	V$_{GS}$=0V, I$_{SD}$=-5A	---	---	-1.2	V

Notes:

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

2.V_{DD} =-30V, L=1.0mH, R_G =25Ω, Starting T $_j$=25℃

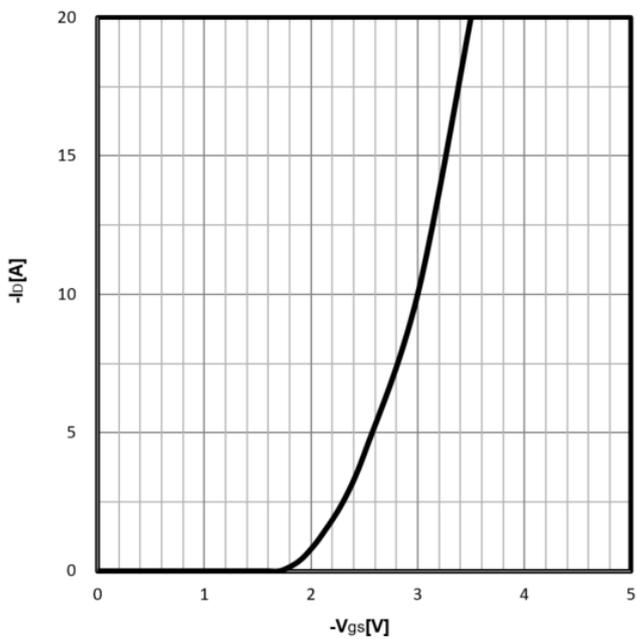## Typical Characteristics： (T$_C$=25℃ unless otherwise noted)
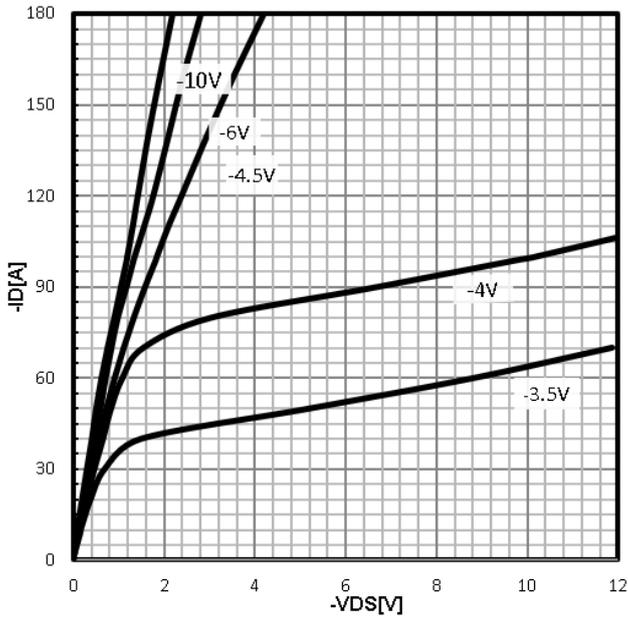
I_D=f(V)

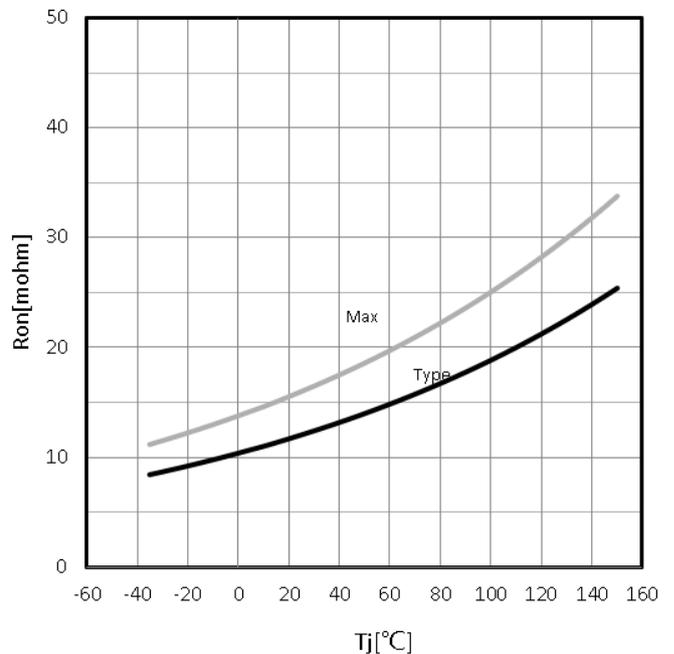Fig1.**Typ. output characteristics**
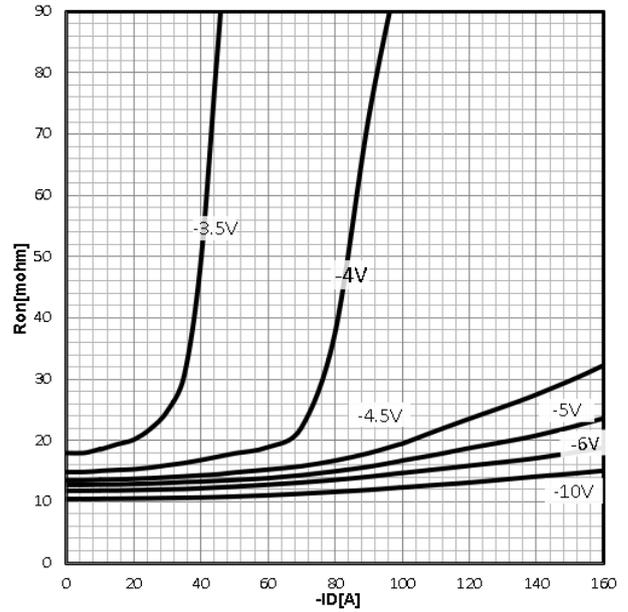
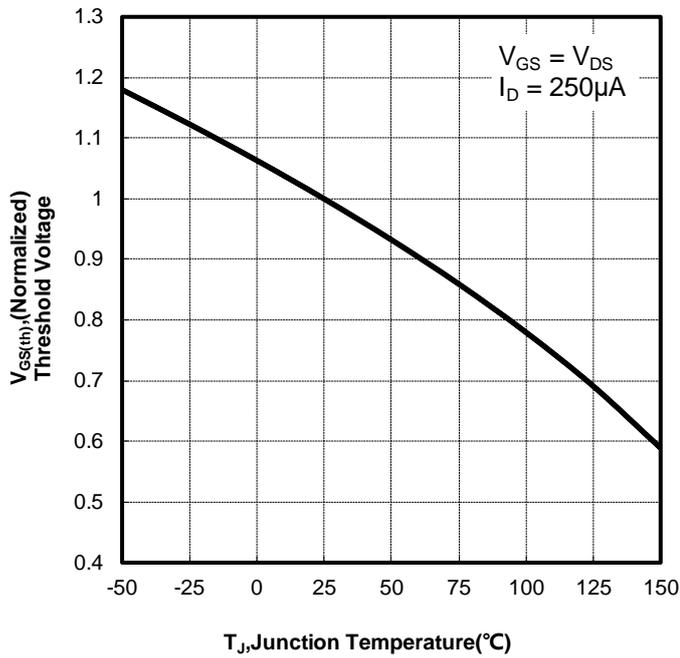$R_{DS(on)}$=f(-I_D)

Fig2.**Typ. drain-source on resistance**

-I_D=f(-V_{GS})

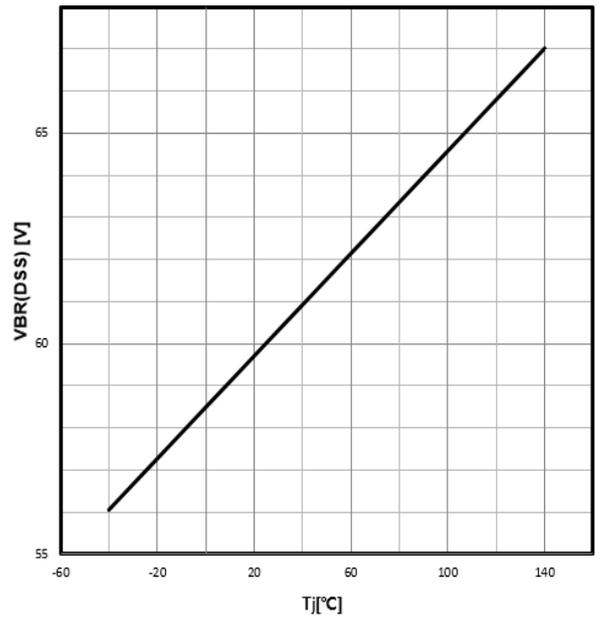Fig3.**Typ. transfer characteristics**
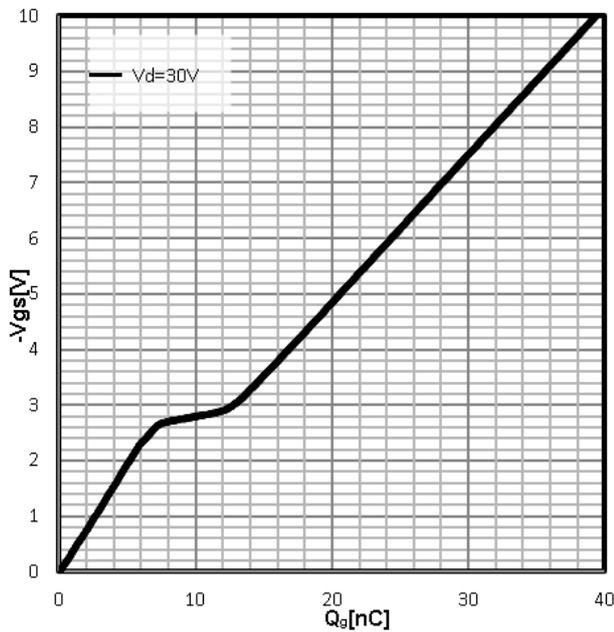

$R_{DS(on)}$= f(T$_j$); I_D=-20A; V_{GS}=-10V
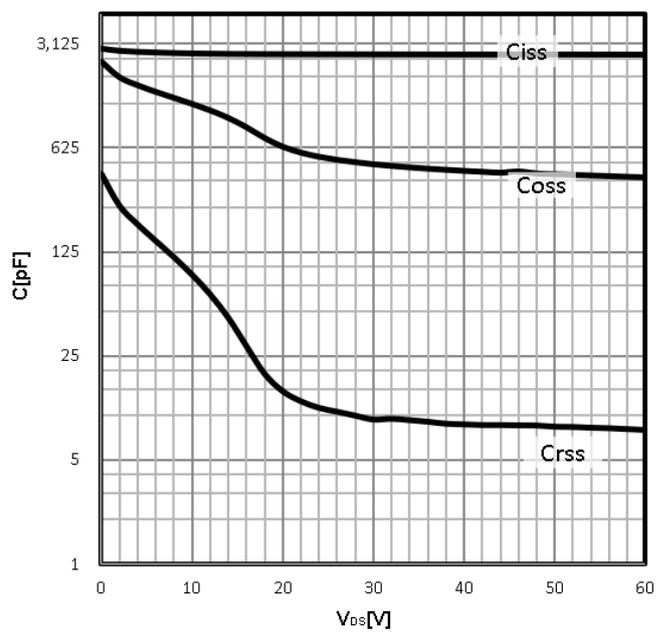
Fig4.**Drain-source on-state resistance**

$-V_{TH}=f(T_j);\ I_D=-250uA$
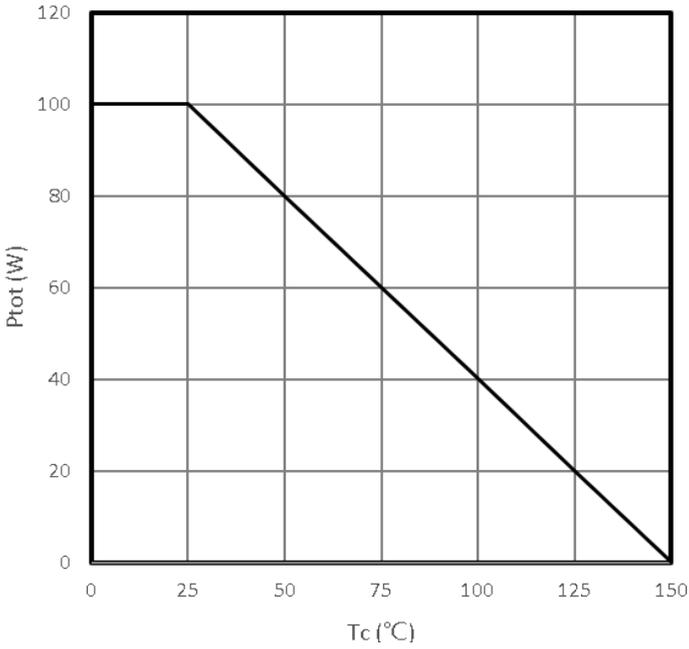Fig5. **Gate Threshold Voltage**

$-V_{BR(DSS)}=f(T_j);\ I_D=-250uA$
Fig6. **Drain-source breakdown voltage**

$V_{GS}=f(Q_{gate})\ ;\ I_D=-10A$
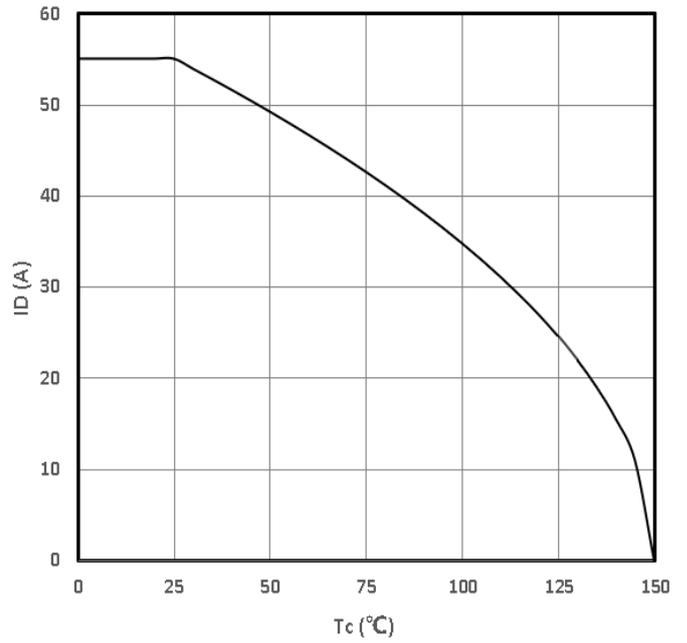Fig7. **Typ. gate charge**

$C=f(-V_{DS});\ V_{GS}=0V;\ f=1MHz$
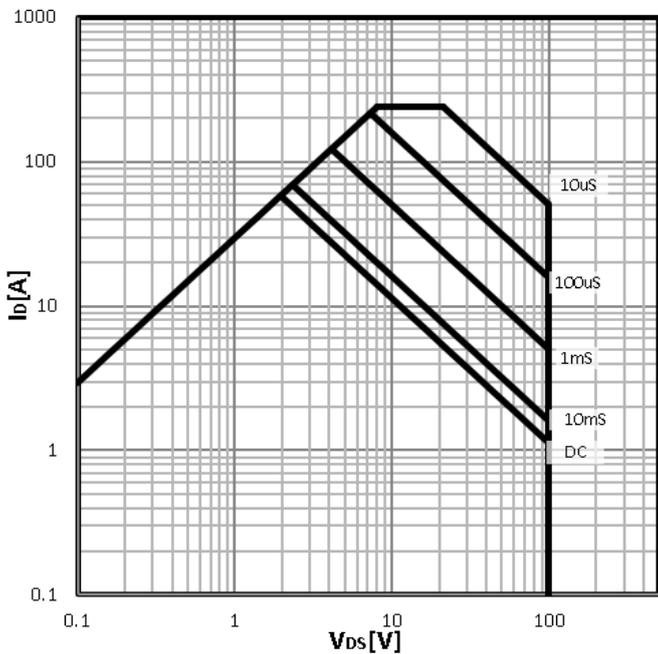Fig8. **Typ. Capacitances**

$P_{tot}=f(T_C)$
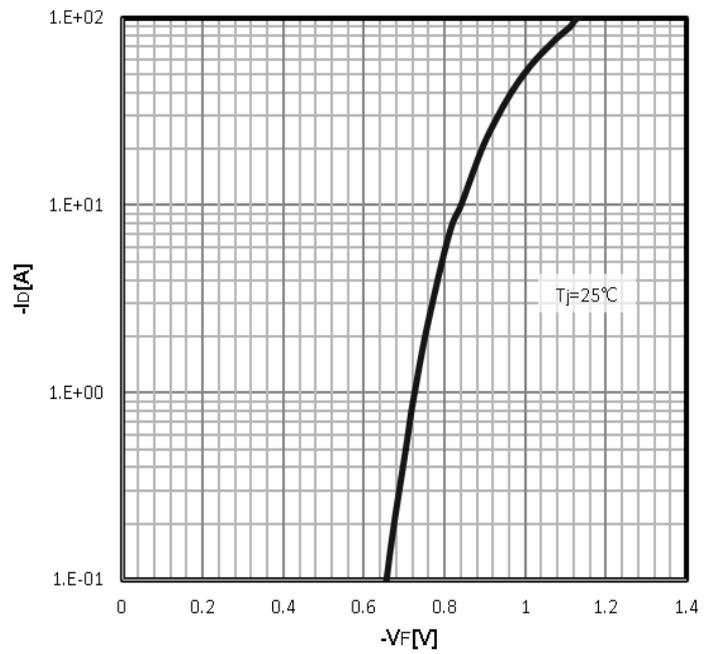Fig9.**Power Dissipation**

$-I_D=f(T_C)$
Fig10.**Maximum Drain Current**

$-I_D=f(-V_{DS})$
Fig11.**Safe operating area**

$-I_F=f(-V_{DS})$
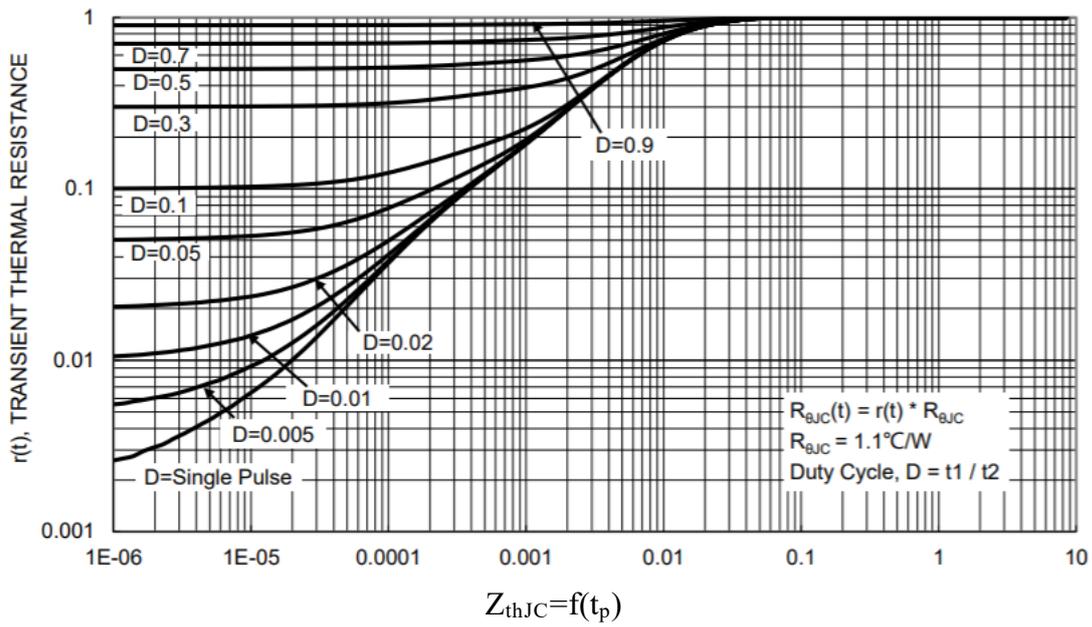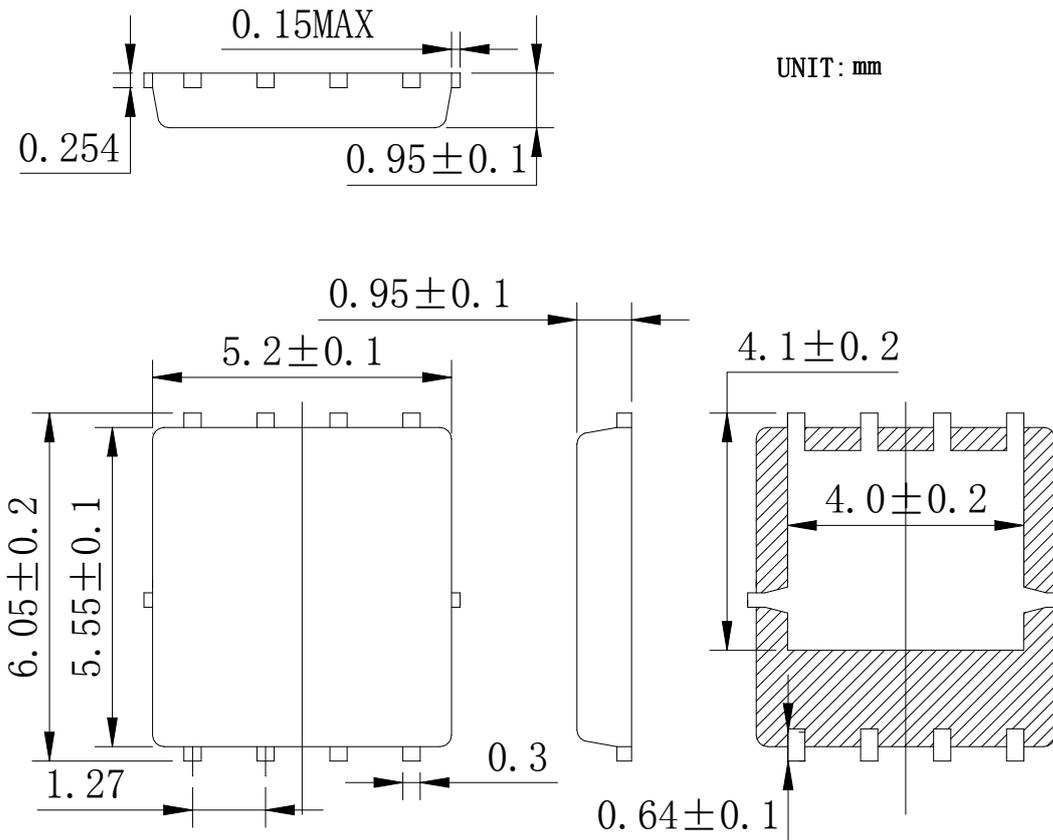Fig12**Body Diode Forward Voltage Variation**

$$Z_{thJC}=f(t_p)$$

Fig13. **Max. transient thermal impedance**

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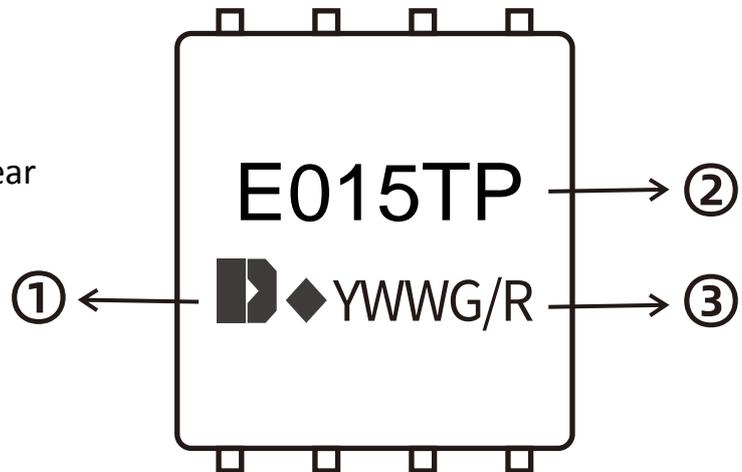
DFN5×6-8　Package Information：

UNIT：mm

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)

E015TP → ②

◆YWWG/R

① ← ◆YWWG/R → ③

Previous Version

Version	Date	Subjects (major changes since last revision)
1.0	2024-02-10	Release of final version

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