

1.Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	7.5mΩ@-10V	-40A
	11mΩ@-4.5V	

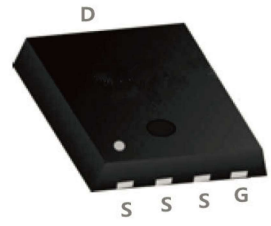
2.Features

- V_{DS} -30V
- I_D -40A
- $R_{DS(ON)}$ (at $V_{GS}=-10V$) <11 mohm
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) <15 mohm
- High cell density trench P-ch MOSFETs
- Super low gate charge
- Excellent CdV/dt effect decline
- Advanced high cell density Trench technology

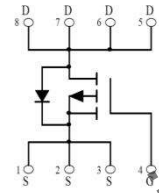
3.Applications

- Battery protection applications
- Load switch

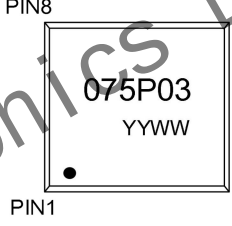
DFNWB3x3-8L



Schematic diagram



Marking



075P03 : Device Code
YY : Year Code
WW : Week Code

4.Absolute Maximum rating ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter		Symbol	Value	Unit
Drain - Source Voltage		V_{DS}	-30	V
Gate - Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_A=25^\circ\text{C}$	I_D	-12	A
	$T_A=100^\circ\text{C}$		-7.5	
	$T_C=25^\circ\text{C}$		-40	
	$T_C=100^\circ\text{C}$		-25	
Pulsed Drain Current		I_{DM}	-120	A
Power Dissipation ³		P_D	62.5	W
Thermal Resistance from Junction to Case		$R_{\theta JC}$	2	$^\circ\text{C/W}$
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-55~ +150	$^\circ\text{C}$

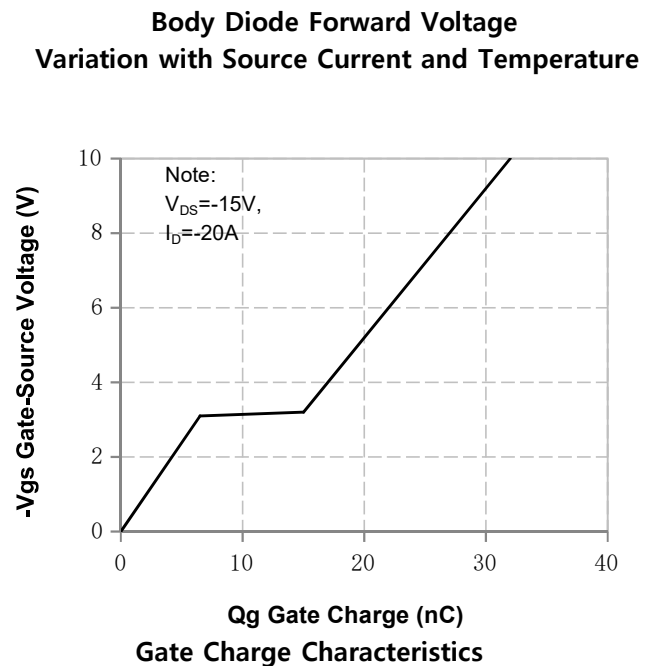
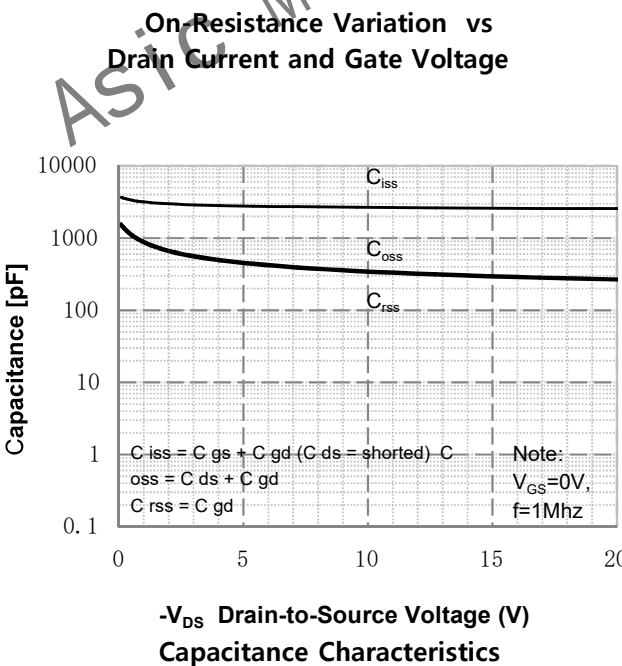
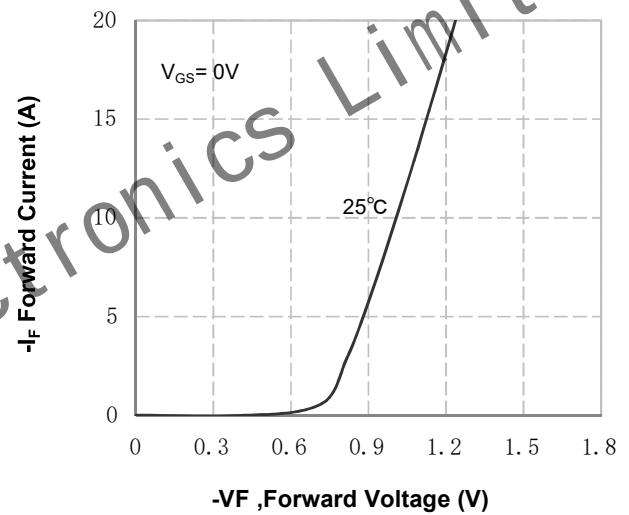
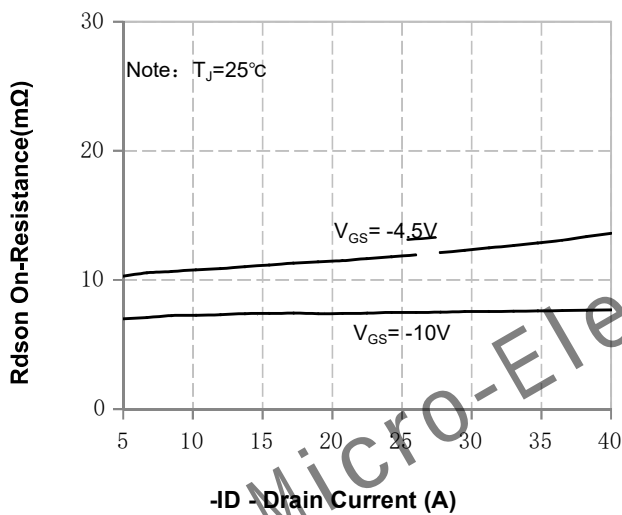
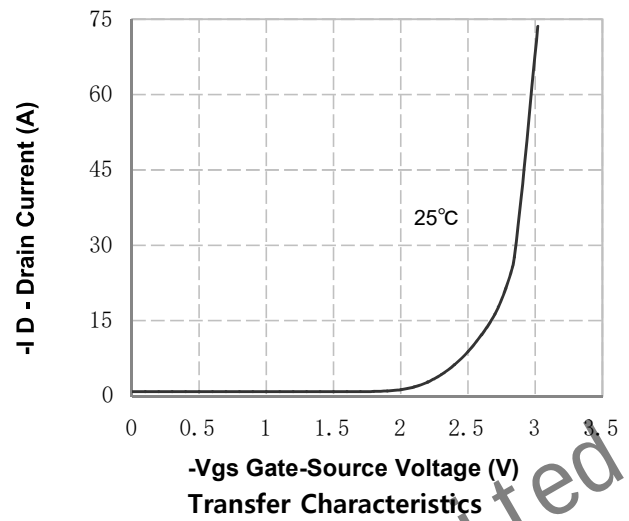
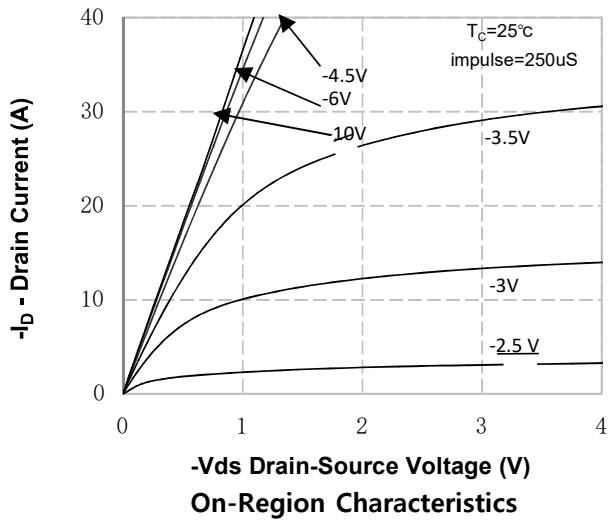
5. Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

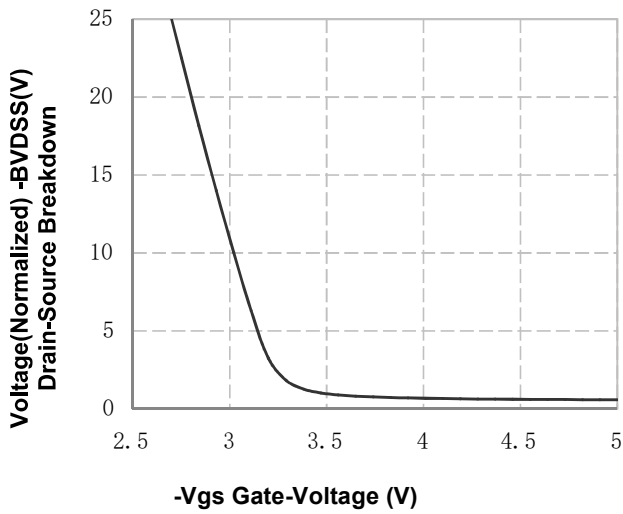
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain - Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30V, V_{GS} = 0V$			1	μA
Gate - Body Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.0	-1.6	-2.5	V
Drain-source On-resistance ²	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -12A$		7.5	11	m Ω
		$V_{GS} = -6V, I_D = -10A$		9.5	12	
		$V_{GS} = -4.5V, I_D = -10A$		11	15	
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = -15V, V_{GS} = 0V,$ $f = 1MHz$		3900		pF
Output Capacitance	C_{oss}			420		
Reverse Transfer Capacitance	C_{rss}			400		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V,$ $I_D = -10A$		62		nC
Gate-source Charge	Q_{gs}			16		
Gate-drain Charge	Q_{gd}			18		
Turn-on Delay Time	$t_{d(on)}$	$V_{DD} = -15V, V_{GS} = -10V,$ $R_G = 3\Omega, R_L = 1.25\Omega$		20		ns
Turn-on Rise Time	t_r			14		
Turn-off Delay Time	$t_{d(off)}$			57		
Turn-off Fall Time	t_f			27		
Source - Drain Diode Characteristics						
Diode Forward Voltage ⁵	V_{SD}	$V_{GS} = 0V, I_S = -2A$			-1.2	V

Notes :

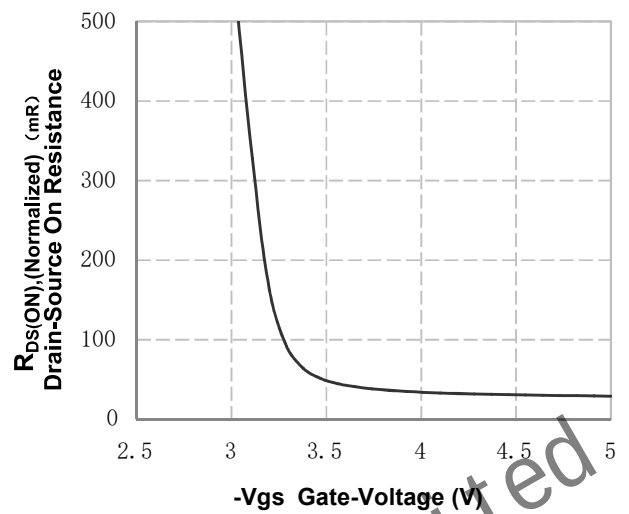
1. The maximum current rating is limited by package.
2. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
3. The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
4. Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.
5. The Data is theoretically the same as ID and IDM. In real applications, it will be limited by total power

6. Typical Characteristic

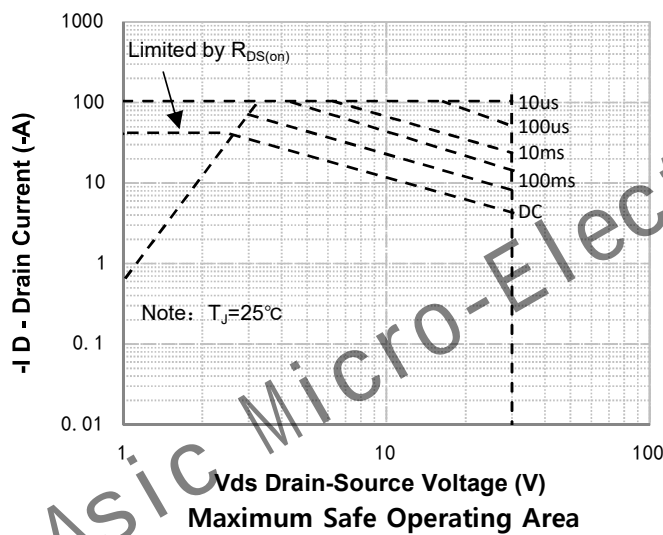




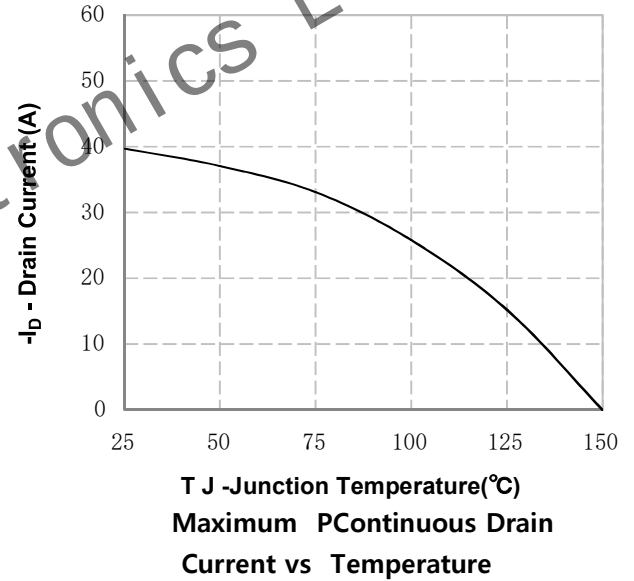
Breakdown Voltage Variation vs Gate-Voltage



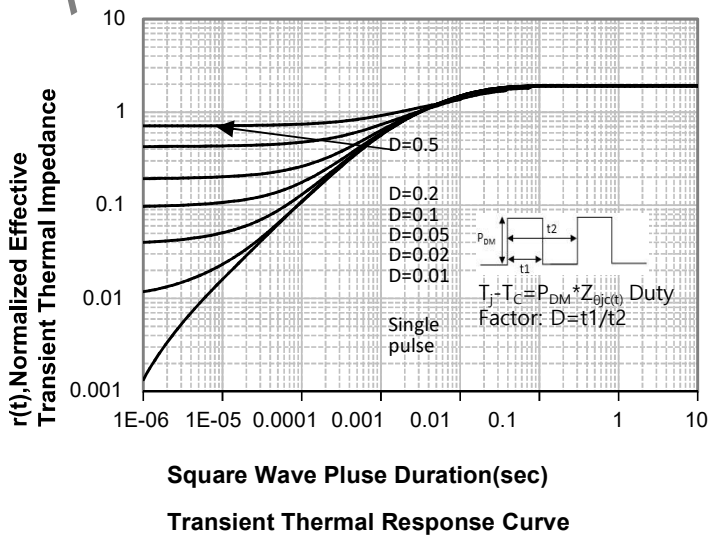
On-Resistance Variation vs Gate Voltage



Maximum Safe Operating Area

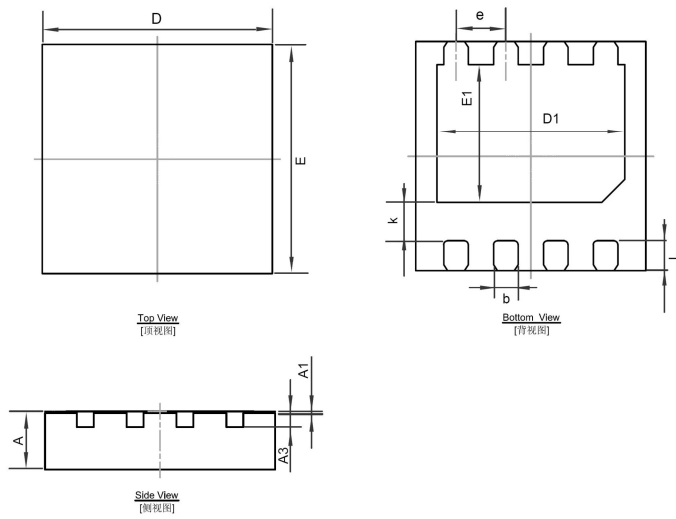


Maximum PContinuous Drain Current vs Temperature



Transient Thermal Response Curve

7.Dimension



Symbol	Dimensions		Dimensions	
	Min	Max	Min	Max
A	0.700	0.800	0.028	0.031
A1	0.000	0.050	0.000	0.002
A3	0.203 REF.		0.008 REF.	
D	2.924	3.076	0.115	0.121
E	2.924	3.076	0.115	0.121
D1	2.350	2.550	0.093	0.100
E1	1.700	1.900	0.067	0.075
k	0.200 MIN.		0.008MIN.	
b	0.270		0.011	
e	0.6500T370		0.0260T015	
L	0.300		0.012	
	0.500		0.020	

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