

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
80V	3.3mΩ@10V	110A



合肥矽普半导体

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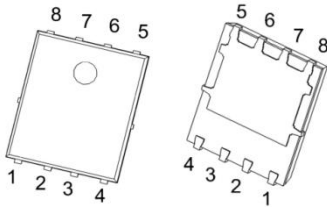
Feature

- Fast Switching
- Low Gate Charge and Rdson
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

- Power switching application
- DC-DC Converter
- Uninterruptible power supply

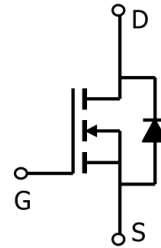
Applications

Package

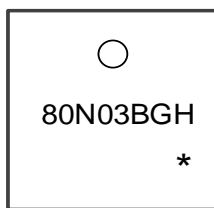


PDFN5×6-8L

Circuit diagram



Marking



80N03BGH : Product code
* : Month code

Order Information

Device	Package	Unite/Tape
SP80N03BGHNK	PDFN5 × 6-8L	5000

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain source voltage	V_{DS}	80	V
Gate source voltage	V_{GS}	± 20	V
Continuous drain current (Tc=25°C)	I_D	110	A
Pulsed drain current	I_{DM}	440	A
Power dissipation (Tc=25°C)	P_D	120	W
Single pulsed avalanche energy ¹⁾	E_{AS}	625	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	1.04	°C/W
Operation and storage temperature	T_{stg}, T_j	-55 to 150	°C

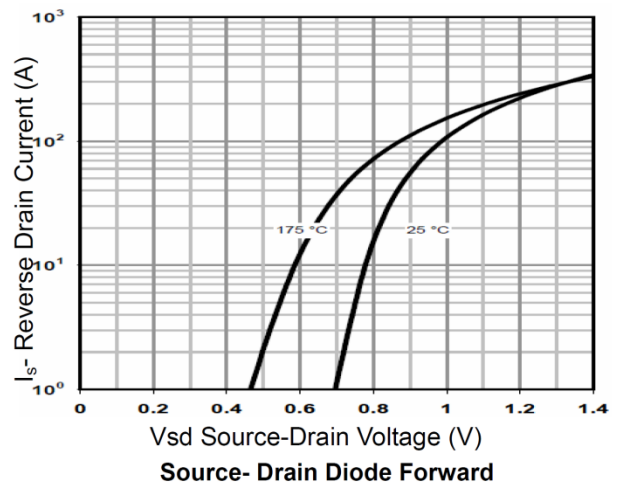
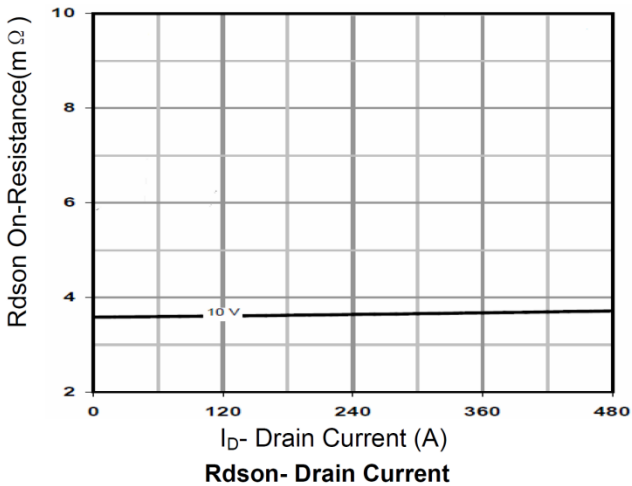
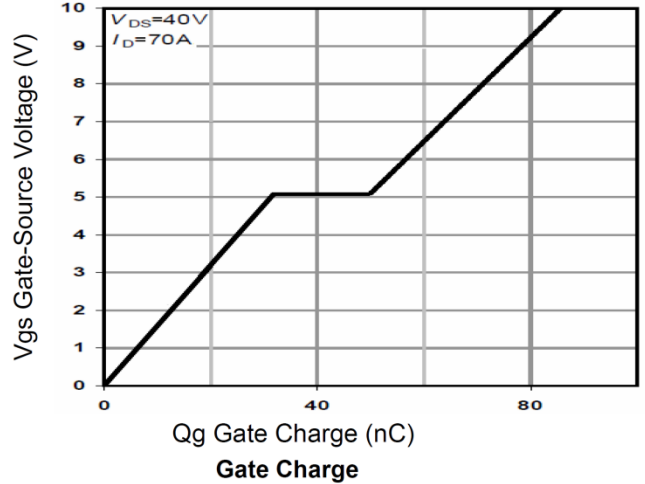
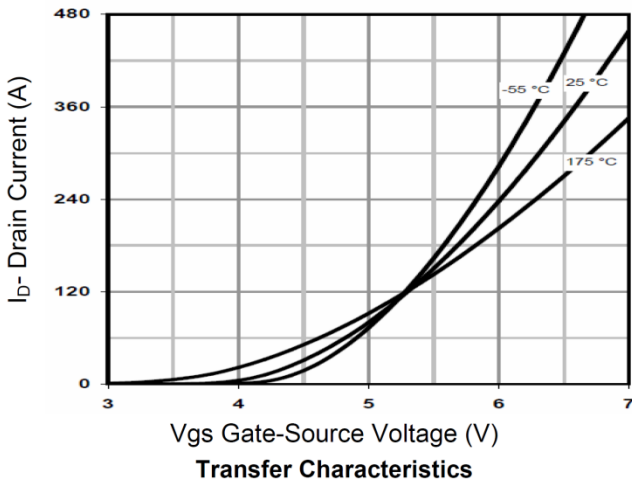
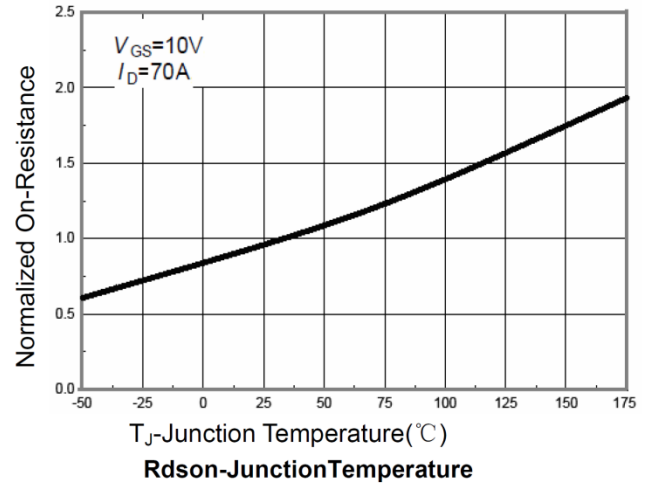
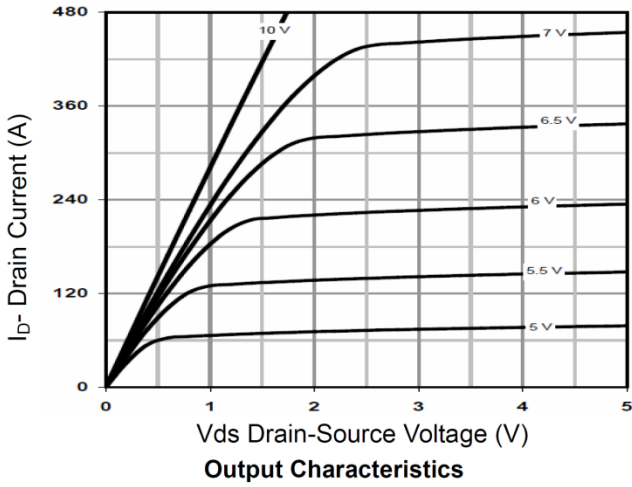
Electrical characteristics (Ta=25°C, unless otherwise noted)

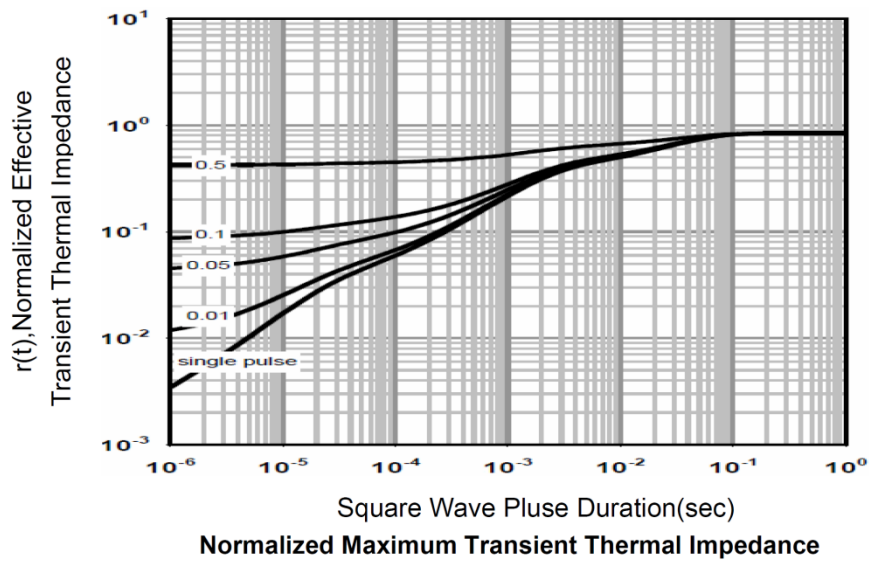
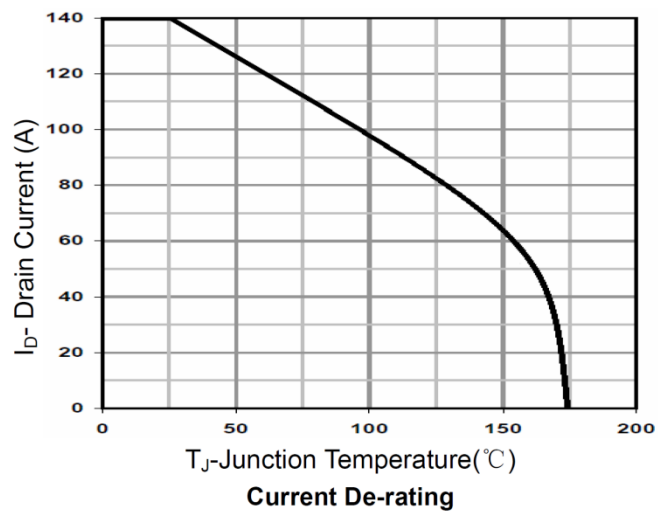
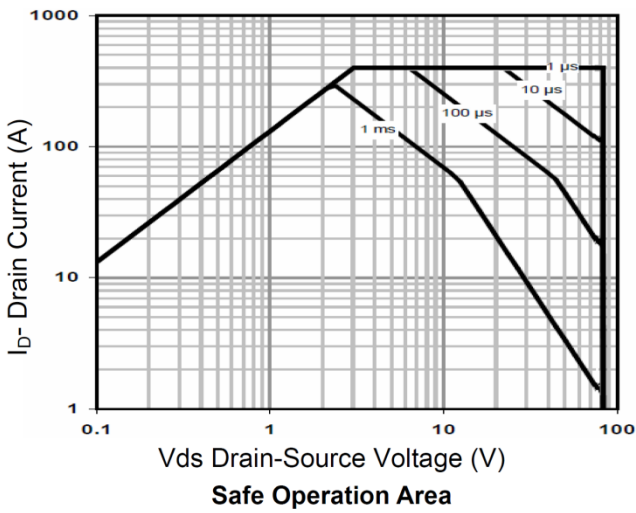
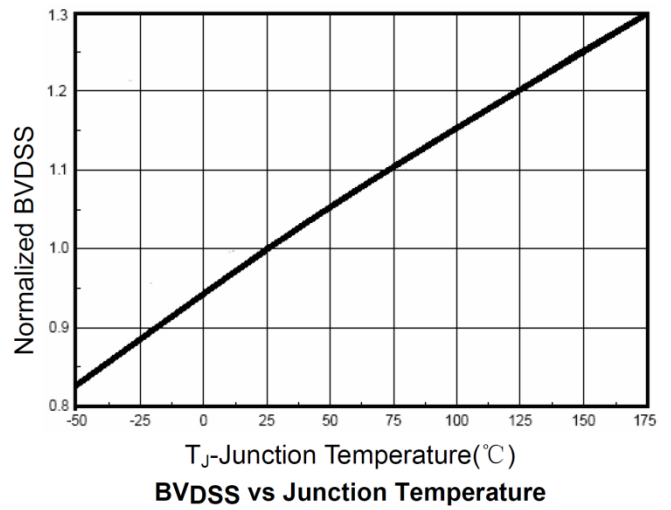
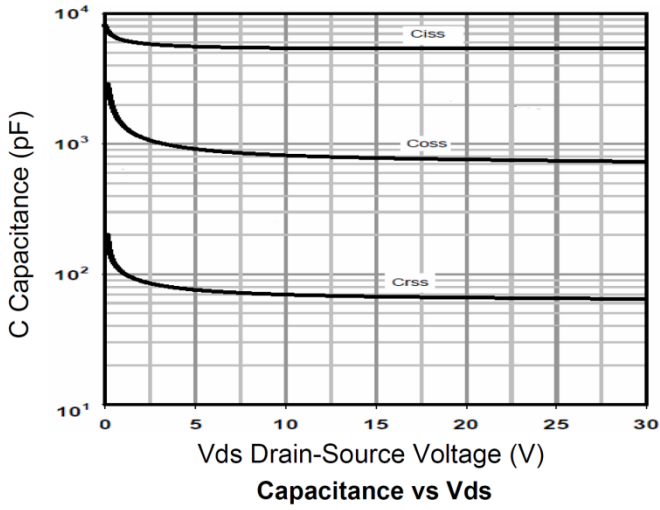
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	80	-	-	V
Drain Cut-Off Current	I_{DSS}	$V_{DS} = 64V, V_{GS} = 0V$	-	-	1	μA
Gate Leakage Current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	± 0.1	
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	2.0	3.0	4.0	V
Drain-Source ON Resistance	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$	-	3.3	4.1	m Ω
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 40V, V_{GS} = 0V, f = 1.0MHz$	-	5360	-	pF
Output Capacitance	C_{oss}		-	850	-	
Reverse Transfer Capacitance	C_{rss}		-	56	-	
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 40V, V_{GS} = 10V, I_D = 20A$	-	42	-	nC
Gate-Source Charge	Q_{gs}		-	15	-	
Gate-Drain Charge	Q_{gd}		-	20	-	
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 40V, R_L = 2.0\Omega, R_G = 3.0\Omega$	-	17	-	ns
Rise Time	t_r		-	39	-	
Turn-Off Delay Time	$t_{d(off)}$		-	64	-	
Fall Time	t_f		-	42	-	
Drain-Source Body Diode Characteristics						
Source-Drain Diode Forward Voltage	V_{SD}	$I_S = 1A, V_{GS} = 0V$	-	-	1.2	V

Note:

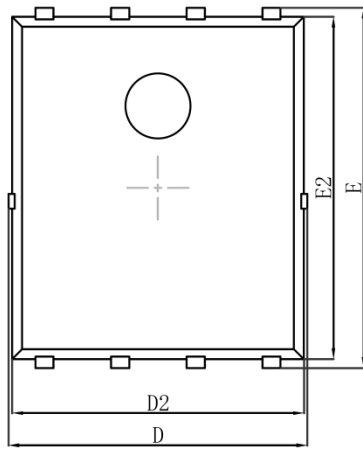
- E_{AS} is tested at starting $T_j = 25^\circ C, V_{DD} = 40V, V_{GS} = 10V, L = 0.5mH, R_g = 25m\Omega$;

Typical Characteristics

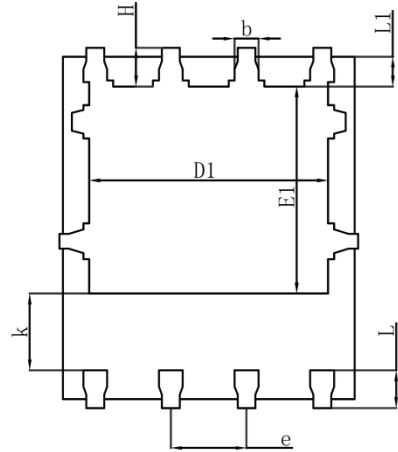




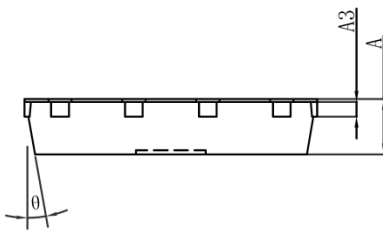
PDFN5×6-8L Package Outline Dimensions



Top View
[顶视图]



Bottom View
[背视图]



Side View
[侧视图]

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

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