

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
80V	3.5mΩ@10V	130A



合肥矽普半导体

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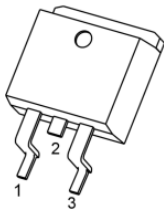
## Feature

- Fast Switching
- Low Gate Charge and R<sub>DS(on)</sub>
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

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

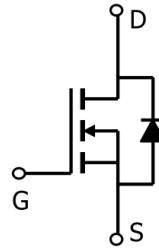
## Applications

## Package

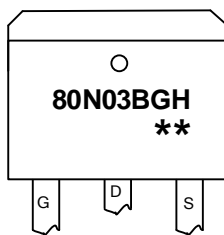


TO-263(1:G 2:D 3:S)

## Circuit diagram



## Marking



80N03BGH : Product code  
 \*\* : Week code

## Order Information

Device	Package	Unite/Tape
SP80N03BGHTD	TO-263-3L	800

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

Parameter	Symbol	Rating	Unit
Drain source voltage	$V_{DS}$	80	V
Gate source voltage	$V_{GS}$	$\pm 20$	V
Continuous drain current (Tc=25°C)	$I_D$	130	A
Pulsed drain current	$I_{DM}$	520	A
Power dissipation (Tc=25°C)	$P_D$	160	W
Single pulsed avalanche energy <sup>1)</sup>	$E_{AS}$	625	mJ
Thermal resistance, junction-case	$R_{\theta JC}$	0.78	°C/W
Operation and storage temperature	$T_{stg}, T_j$	-55 to 150	°C

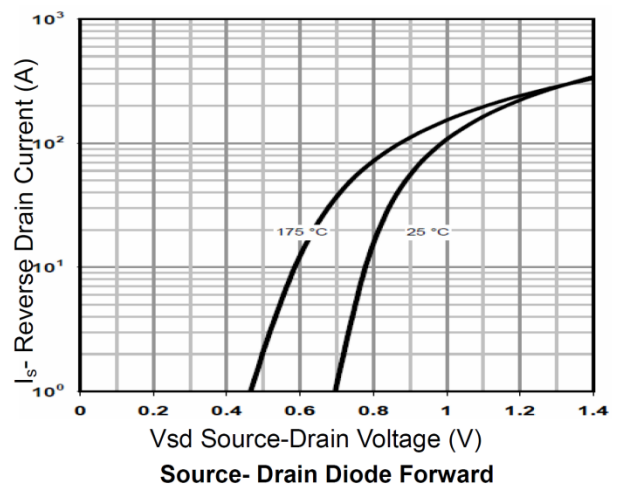
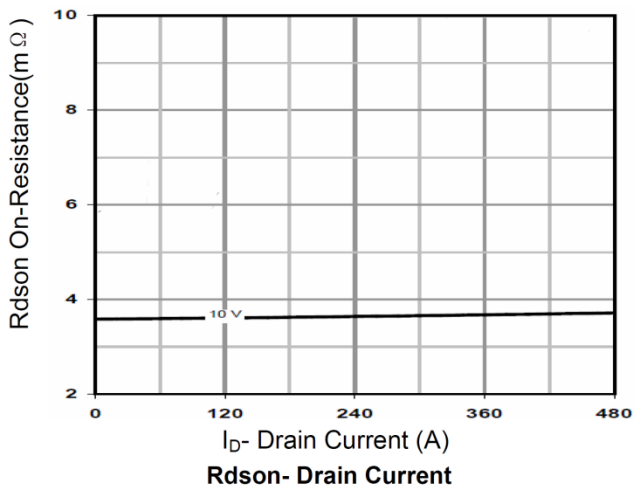
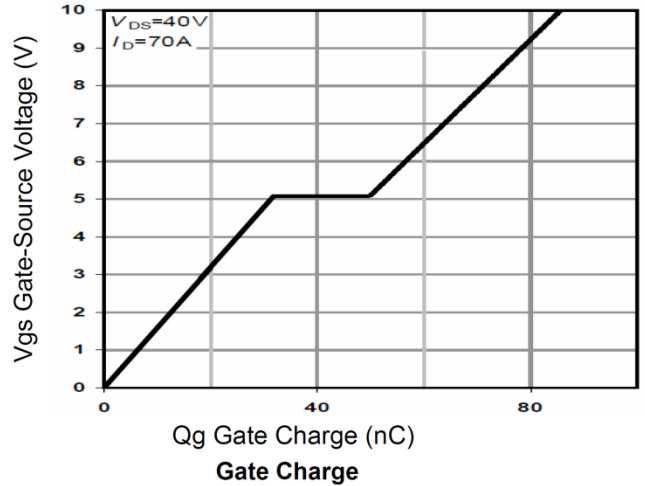
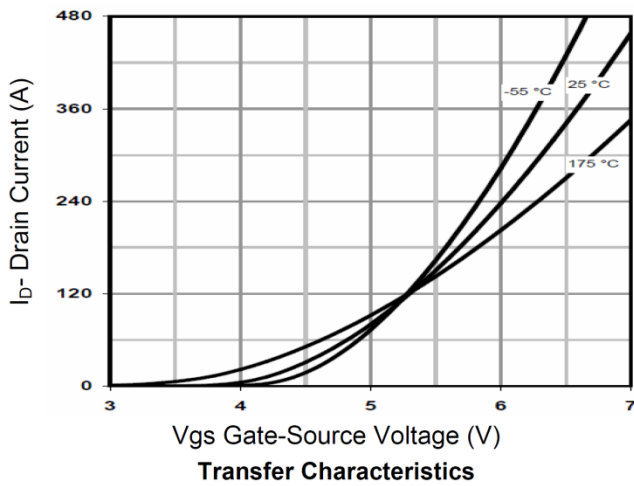
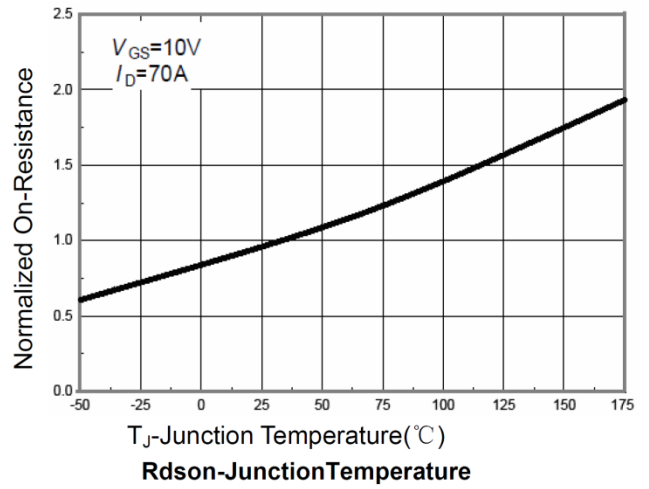
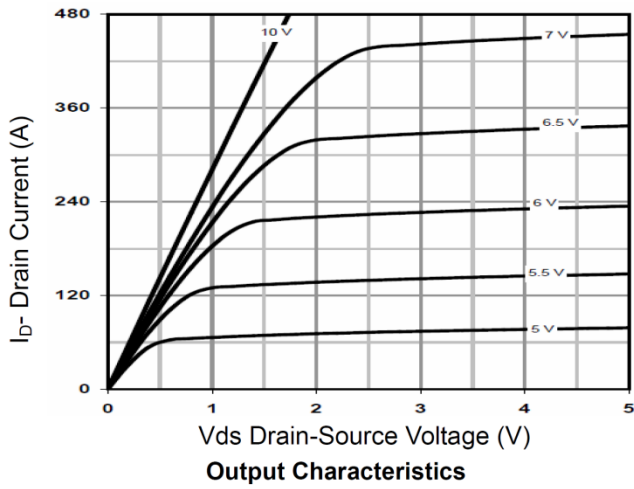
**Electrical characteristics (Ta=25°C, unless otherwise noted)**

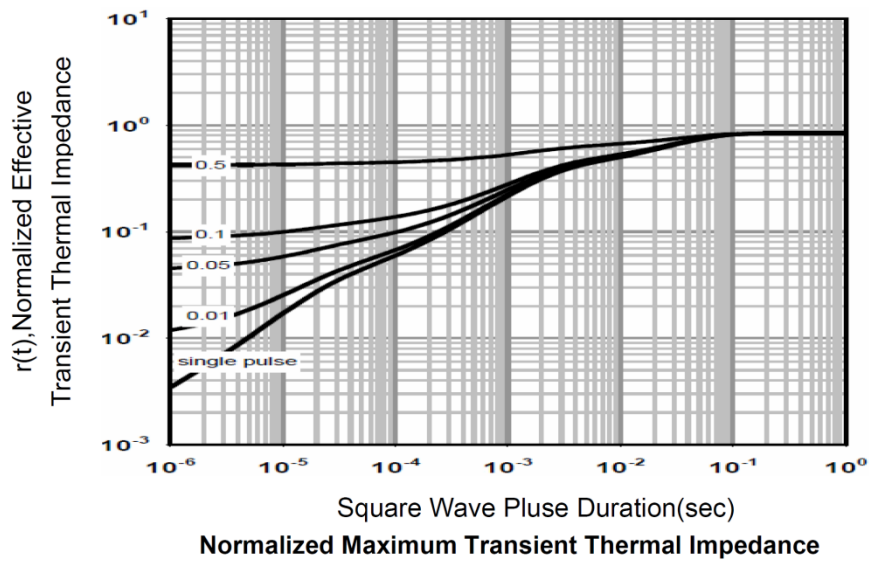
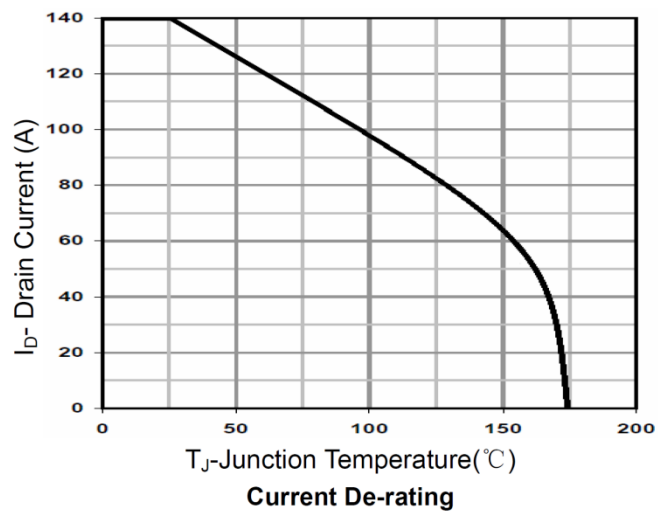
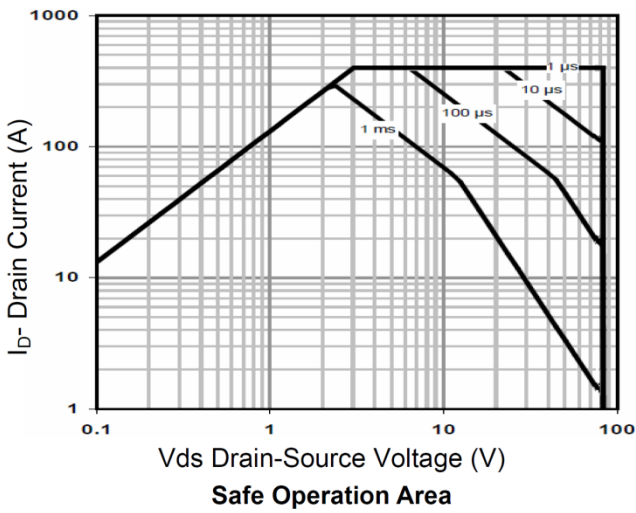
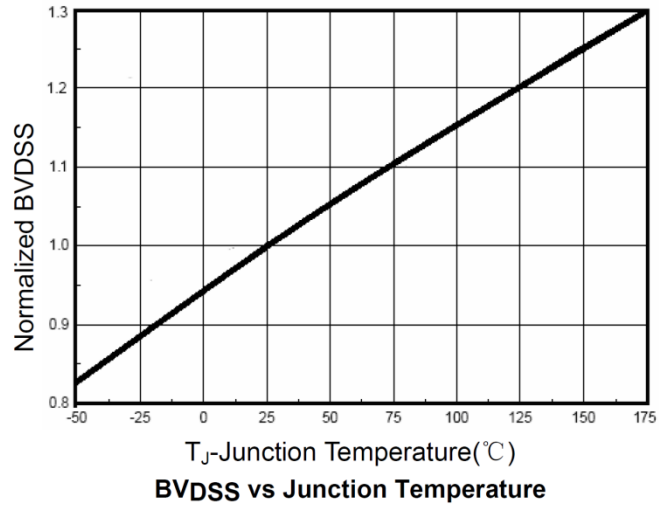
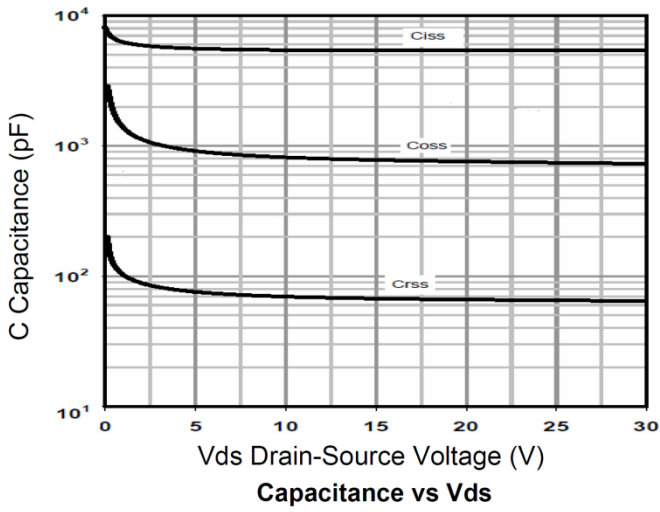
Characteristics	Symbol	Test Condition	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	$I_D = 250\mu A, V_{GS} = 0V$	80	-	-	V
Drain Cut-Off Current	$I_{DSS}$	$V_{DS} = 64V, V_{GS} = 0V$	-	-	1	$\mu A$
Gate Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$	-	-	$\pm 0.1$	
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	$R_{DS(ON)}$	$V_{GS} = 10V, I_D = 20A$	-	3.5	4.5	m $\Omega$
<b>Dynamic Characteristics</b>						
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	-	
<b>Switching Characteristics</b>						
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	-	
<b>Drain-Source Body Diode Characteristics</b>						
Source-Drain Diode Forward Voltage	$V_{SD}$	$I_S = 1A, V_{GS} = 0V$	-	-	1.2	V

Note:

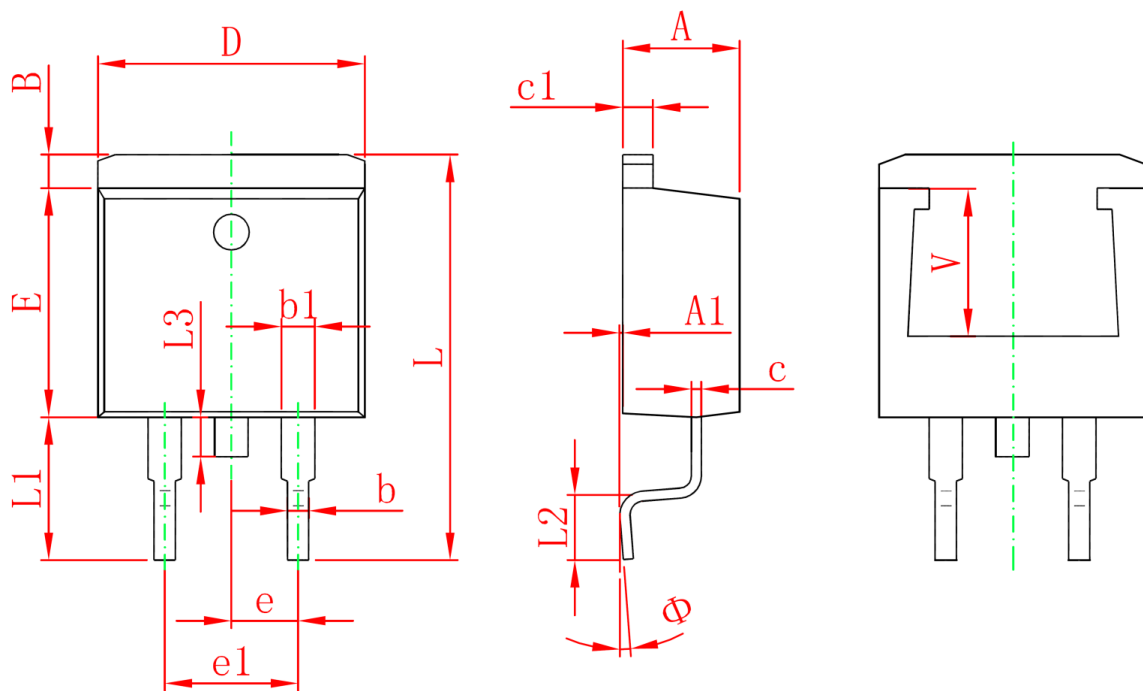
- $E_{AS}$  is tested at starting  $T_j = 25^\circ C, V_{DD} = 40V, V_{GS} = 10V, L = 0.5mH, R_g = 25m\Omega$ ;

## Typical Characteristics





**TO-263 Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	

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