

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

Product Specification

▶ Domestic	Part Number	BSZ065N06LS5
▶ Overseas	Part Number	BSZ065N06LS5
▶ Equivalent	Part Number	BSZ065N06LS5

EV is the abbreviation of name EVVO

60V N-Channel Enhancement Mode MOSFET

Description

The BSZ065N06LS5 is the high cell density trench N-ch MOSFETs, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The BSZ065N06LS5 meet the RoHS and Green Product requirement, 100% EAS guaranteed with full function reliability approved.

- ★ 100% EAS Guaranteed
- ★ Green Device Available
- ★ Super Low Gate Charge
- ★ Excellent CdV/dt effect decline
- ★ Advanced high cell density Trench technology

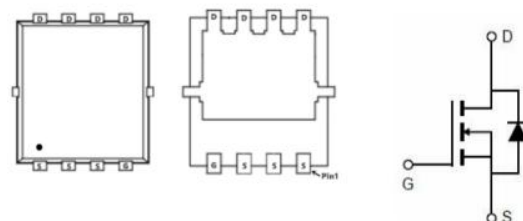
Product Summary

$V_{DS} = 60V$ $I_D = 80A$

$R_{DS(ON)} < 7.5 m\Omega$ @ $V_{GS}=10V$

$R_{DS(ON)} < 10m\Omega$ @ $V_{GS}=4.5V$

PDFN3*3-8L Pin Configuration



Absolute Maximum Ratings ($T_C=25^\circ C$ unless otherwise specified)

Symbol	Parameter		Max.	Units
V _{DSS}	Drain Source Voltage		60	V
V _{GSS}	Gate-Source Voltage		±20	V
I _D	Continuous Drain Current	T _C = 25°C	80	A
		T _C = 100°C	38	A
I _{DM}	Pulsed Drain Current ^{note1}		54	A
E _{AS}	Single Pulsed Avalanche Energy ^{note2}		180	mJ
P _D	Power Dissipation	T _C = 25°C	60	W
R _{θJC}	Thermal Resistance, Junction to Case		2.5	°C/W
T _J , T _{STG}	Operating and Storage Temperature Range		-55 to +175	°C

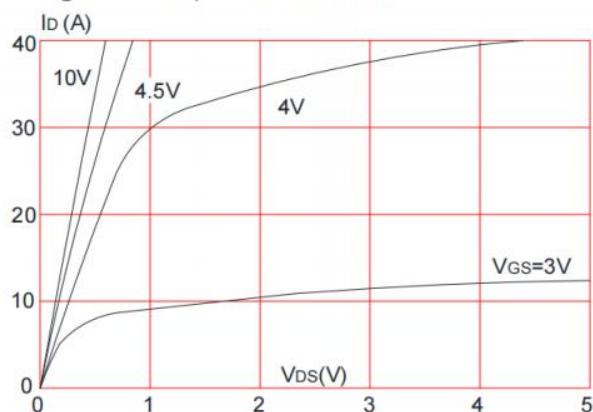
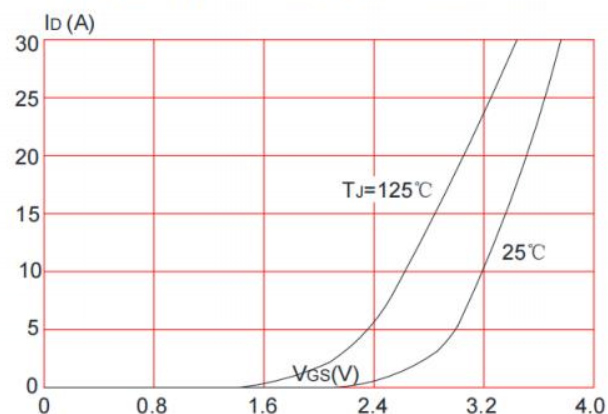
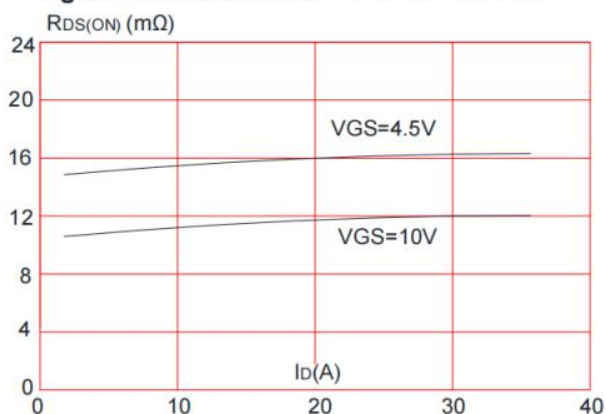
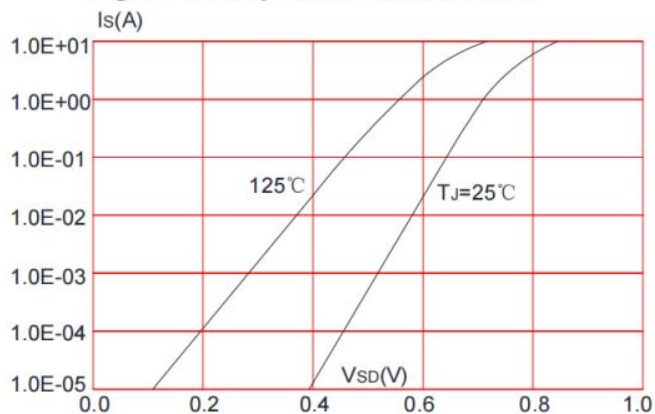
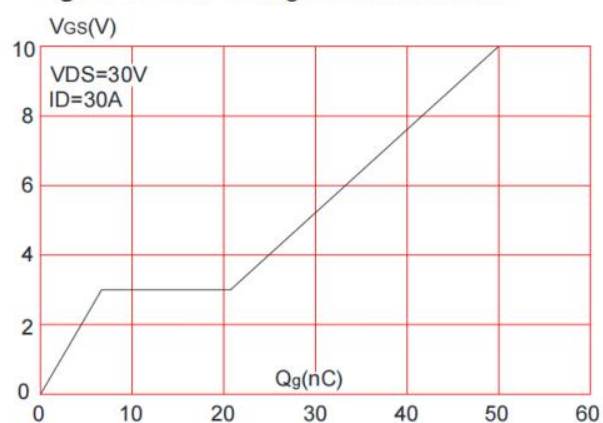
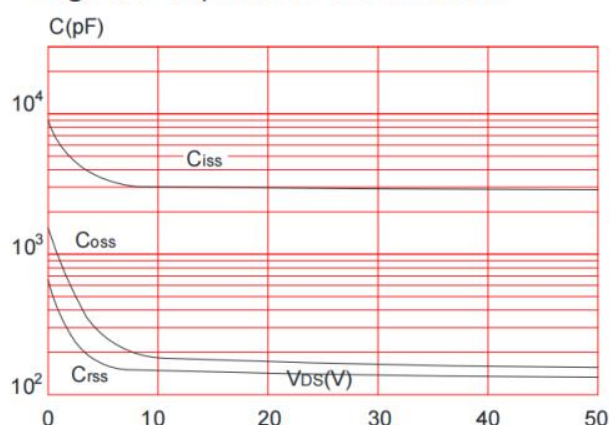
60V N-Channel Enhancement Mode MOSFET

Electrical Characteristics ($T_J=25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
Off Characteristic						
V _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	60	-	-	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V,	-	-	1.0	μA
I _{GSS}	Gate to Body Leakage Current	V _{DS} =0V, V _{GS} = ±20V	-	-	±100	nA
On Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	1.5	2.0	2.5	V
R _{DS(on)}	Static Drain-Source on-Resistance note3	V _{GS} =10V, I _D =1A	-	4.0	7.5	mΩ
		V _{GS} =4.5V, I _D =20A	-	7.3	10	
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =25V, V _{GS} =0V, f=1.0MHz	-	930	-	pF
C _{oss}	Output Capacitance		-	230	-	pF
C _{rss}	Reverse Transfer Capacitance		-	8	-	pF
Q _g	Total Gate Charge	V _{DS} =30V, I _D =20A, V _{GS} =10V	-	22	-	nC
Q _{gs}	Gate-Source Charge		-	4.5	-	nC
Q _{gd}	Gate-Drain(“Miller”) Charge		-	3.5	-	nC
Switching Characteristics						
t _{d(on)}	Turn-on Delay Time	V _{DD} =30V, I _D =20A, R _G =1.6Ω, V _{GS} =10V	-	4.5	-	ns
t _r	Turn-on Rise Time		-	2.7	-	ns
t _{d(off)}	Turn-off Delay Time		-	13.8	-	ns
t _f	Turn-off Fall Time		-	2.7	-	ns
Drain-Source Diode Characteristics and Maximum Ratings						
I _S	Maximum Continuous Drain to Source Diode Forward Current		-	-	45	A
I _{SM}	Maximum Pulsed Drain to Source Diode Forward Current		-	-	180	A
V _{SD}	Drain to Source Diode Forward Voltage	V _{GS} =0V, I _S =30A	-	-	1.2	V
t _{rr}	Body Diode Reverse Recovery Time	T _J =25℃, I _F =20A, dI/dt=100A/μs	-	18	-	ns
Q _{rr}	Body Diode Reverse Recovery Charge		-	12	-	nC

Notes:1. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. EAS condition: $T_J=25^\circ\text{C}$, $V_{DD}=30V$, $V_G=10V$, $R_G=25\Omega$, $L=0.5mH$, $I_{AS}=12A$ 3. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

60V N-Channel Enhancement Mode MOSFET
Typical Performance Characteristics
Figure 1: Output Characteristics

Figure 2: Typical Transfer Characteristics

Figure 3: On-resistance vs. Drain Current

Figure 4: Body Diode Characteristics

Figure 5: Gate Charge Characteristics

Figure 6: Capacitance Characteristics


60V N-Channel Enhancement Mode MOSFET

Figure 7: Normalized Breakdown Voltage vs. Junction Temperature

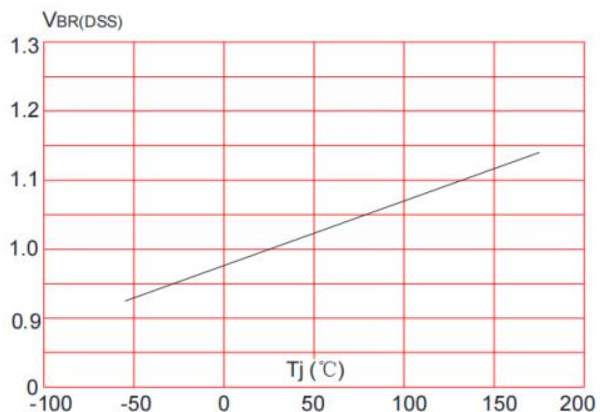


Figure 8: Normalized on Resistance vs. Junction Temperature

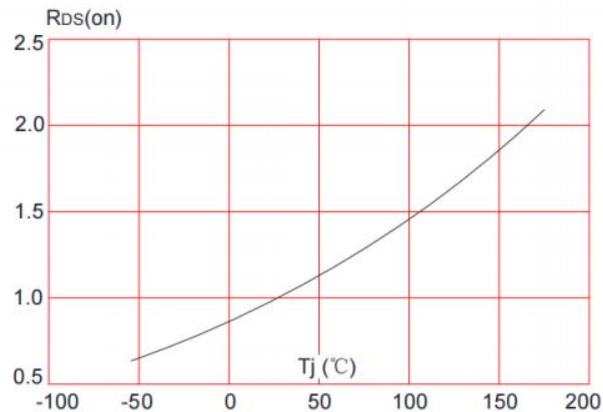


Figure 9: Maximum Safe Operating Area

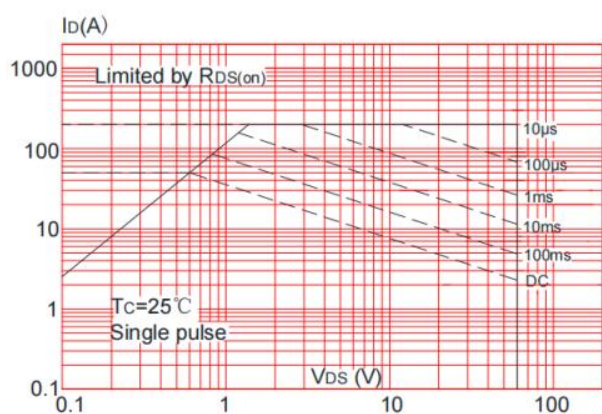


Figure 10: Maximum Continuous Drain Current vs. Case Temperature

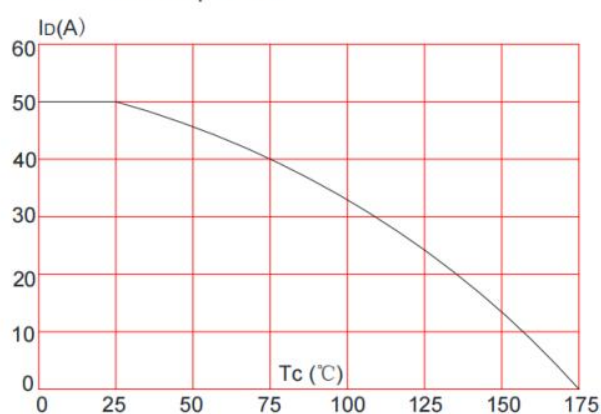
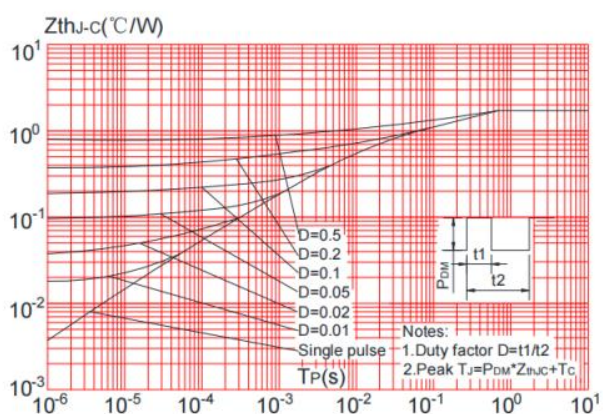
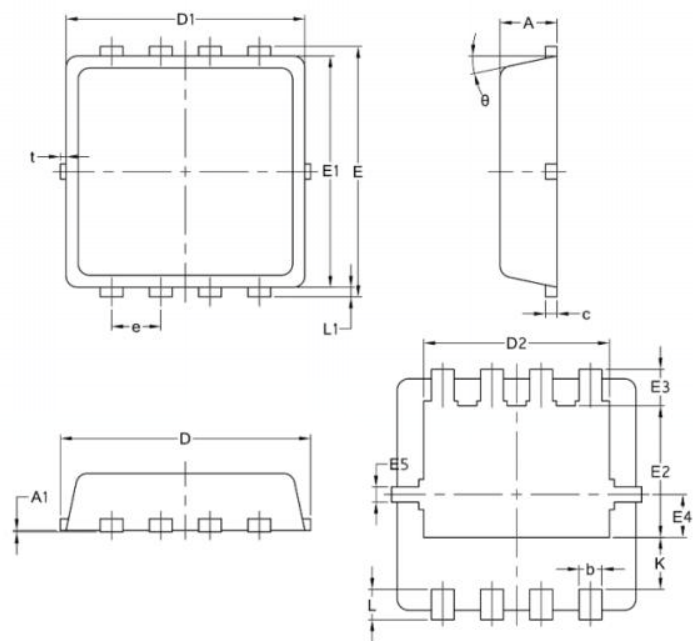


Figure.11: Maximum Effective Transient Thermal Impedance, Junction-to-Case



60V N-Channel Enhancement Mode MOSFET

Package Mechanical Data-DFN3*3-8L-JQ Single



Symbol	Common		
	mm		
	Mim	Nom	Max
A	0.70	0.75	0.85
A1	/	/	0.05
b	0.20	0.30	0.40
c	0.10	0.152	0.25
D	3.15	3.30	3.45
D1	3.00	3.15	3.25
D2	2.29	2.45	2.65
E	3.15	3.30	3.45
E1	2.90	3.05	3.20
E2	1.54	1.74	1.94
E3	0.28	0.48	0.65
E4	0.37	0.57	0.77
E5	0.10	0.20	0.30
e	0.60	0.65	0.70
K	0.59	0.69	0.89
L	0.30	0.40	0.50
L1	0.06	0.125	0.20
t	0	0.075	0.13
Φ	10	12	14

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