THE DATASHEET OF

SL05N06Z

SL05N06Z

Features

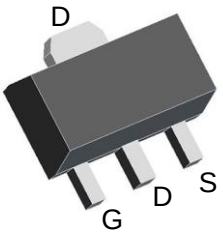
- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

Product Summary

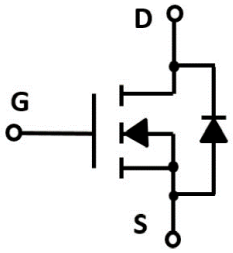
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
60V	100mΩ@10V	5A
	150mΩ@4.5V	

Application

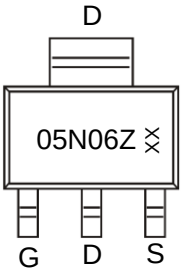
- Power switching application



SOT-89 top view



Schematic diagram



05N06Z: Device code
XX: Code

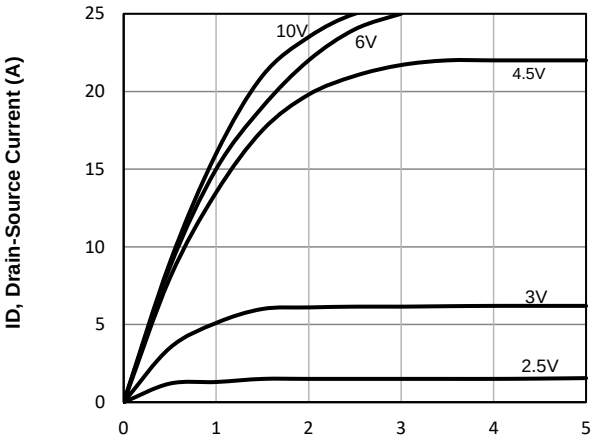
Marking and pin assignment

Absolute Maximum Ratings (TA=25℃unless otherwise noted)

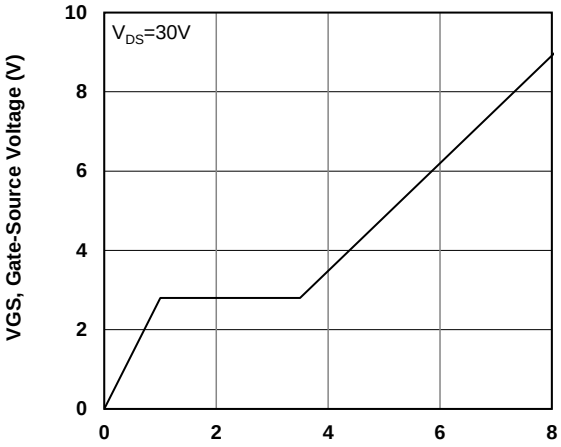
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V_{DS}	Drain-Source Breakdown Voltage		60	V
V_{GS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-55 to 150	°C
I_S	Diode Continuous Forward Current	Tc=25°C	5	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	20	A
I_D	Continuous Drain Current@GS=10V	Tc=25°C	5	A
P_D	Maximum Power Dissipation	Tc=25°C	0.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient((*1 in2 Pad of 2-oz Copper), Max.)		200	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	**Parameter**	**Condition**	**Min**	**Typ**	**Max**	**Unit**
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
$BV_{(BR)DSS}$	Drain-Source Breakdown Voltage	VGS=0V，ID=250μA	60	--	--	V
I_{DSS}	Zero Gate Voltage Drain Current	VDS=60V，VGS=0V	--	--	1	uA
I_{GSS}	Gate-Body Leakage Current	VGS=±20V，VDS=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	VDS=VGS，ID=250μA	1.1	1.7	2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	VGS=10V， ID=3A	--	58	100	mΩ
		VGS=4.5V，ID=2A	--	70	150	
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	VDS=30V，VGS=0V， f=1MHz	--	400	--	pF
C_{OSS}	Output Capacitance		--	28	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	23	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	VDS=30V，ID=3A，VGS=10V	--	9	--	nC
Q_{gs}	Gate Source Charge		--	1	--	nC
Q_{gd}	Gate Drain Charge		--	2.5	--	nC
$t_{d(on)}$	Turn-on Delay Time	VDD=30V，ID=3A，VGS=10V，RG=2.3Ω	--	4	--	nS
t_r	Turn-on Rise Time		--	10	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	12.5	--	nS
t_f	Turn-Off Fall Time		--	1.8	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃，Is=3A，	--	0.8	1.2	V

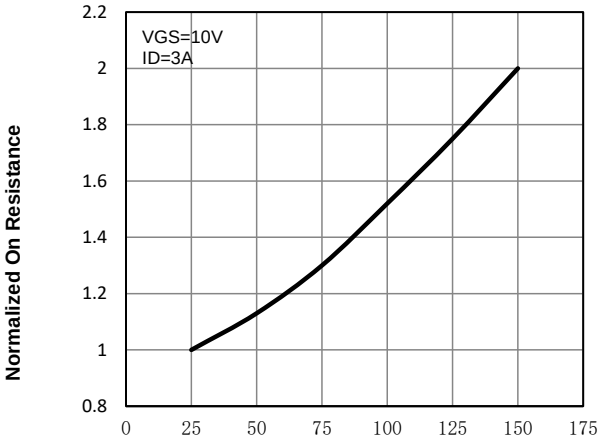
Typical Operating Characteristics



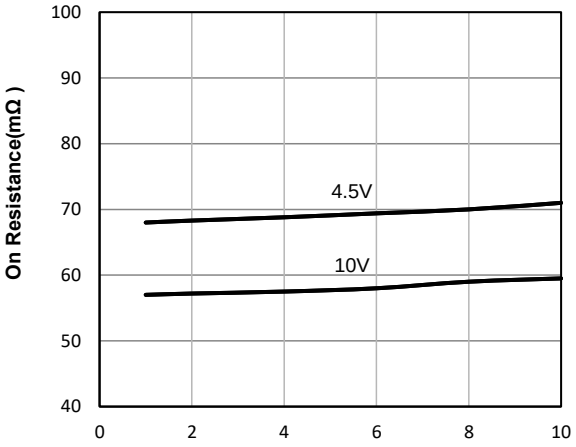
VDS, Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



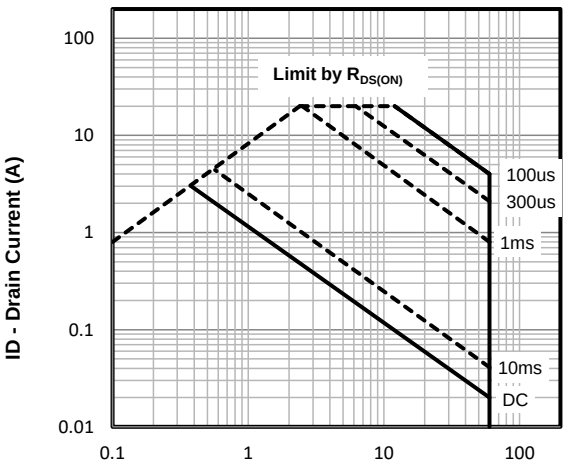
Qg -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs.Gate-Source Voltage



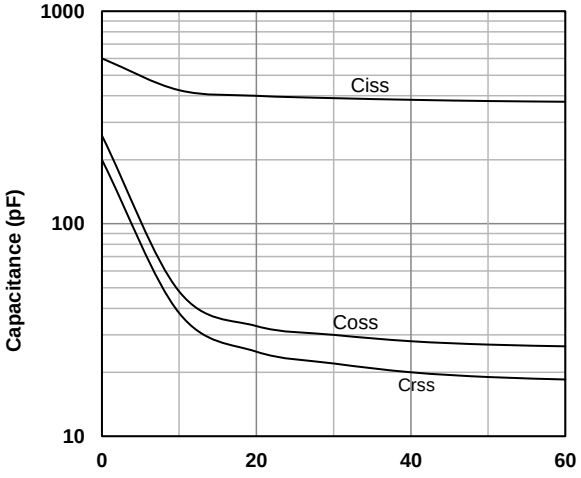
Tj - Junction Temperature (°C)
Fig3. Normalized On-Resistance Vs. Temperature



ID, Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current

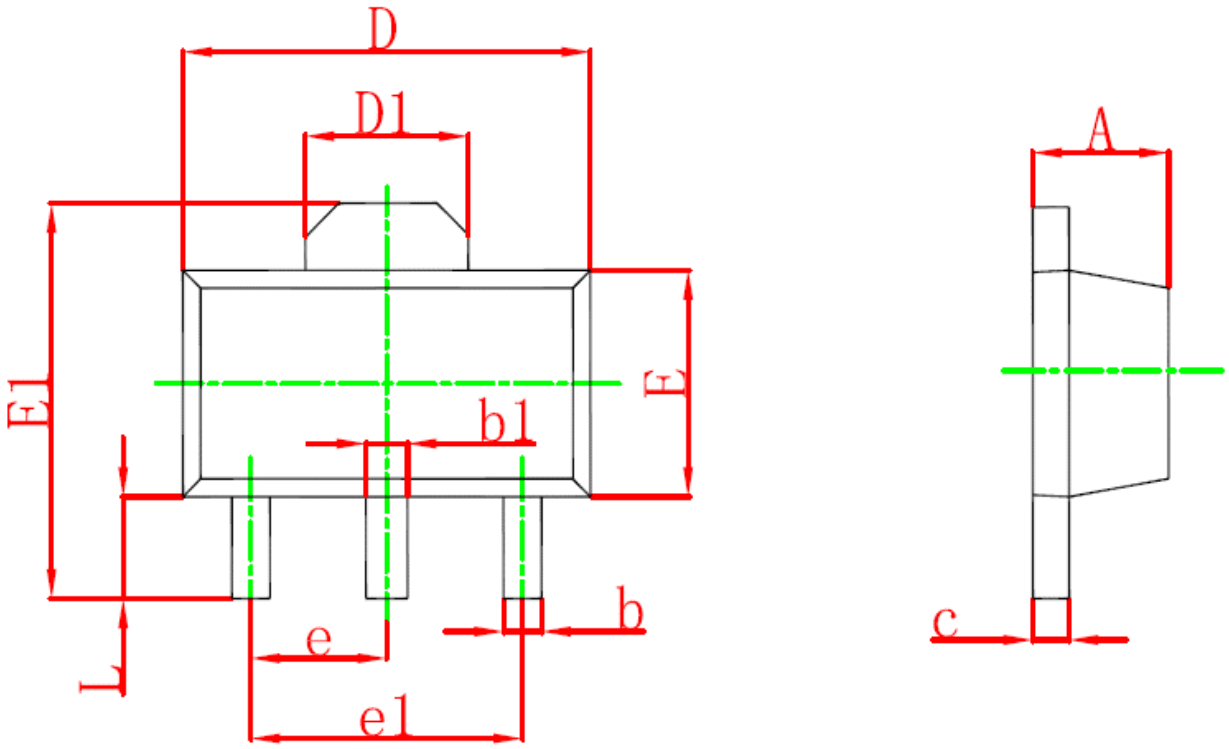


VDS, Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



VDS , Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs.Drain-Source Voltage

SOT-89 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047

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