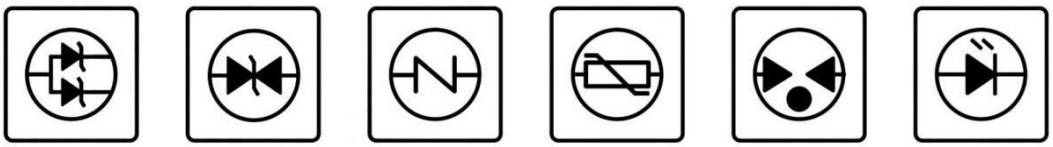
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MSZ0G03AP

Product specification

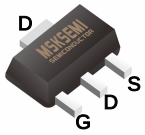
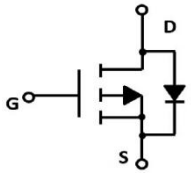
MSZ0G03AP

-60V/-3A P-Channel MOSFET

Features

- Leading trench technology for low $R_{DS(on)}$
- Low Gate Charge
- Excellent package for good heat dissipation

Reference News

SOT-89-3L	Schematic diagram	Marking
		1A05AP xxx xxxx

Application

- Video monitor
- Power management

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
-60V	130mΩ@-10V	-3A
	150mΩ@-4.5V	

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	-3	A
Mounted on Large Heat Sink				
I_{DM}	Pulse Drain Current Tested	Tc=25°C	-9	A
I_D	Continuous Drain Current	Tc=25°C	-3	A
P_D	Maximum Power Dissipation	Tc=25°C	0.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		250	°C/W

Ordering Information (Example)

Type	Package	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MSZ0G03AP	SOT-89-3L	1,000	4,000	24,000	7"reel

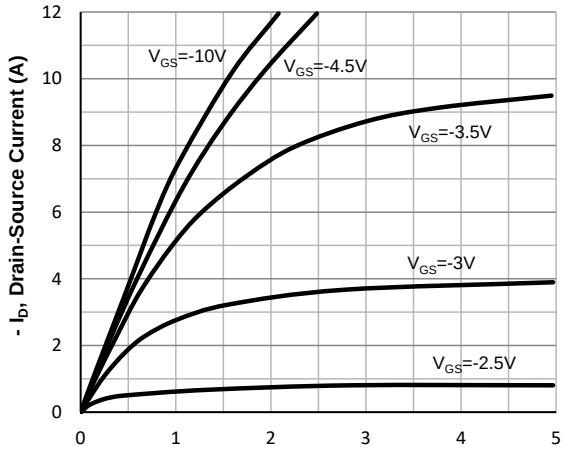
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Electrical Characteristics (TJ=25℃ unless otherwise noted)

Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
$BV_{(BR)DSS}$	Drain-Source Breakdown Voltage	V_{GS}=0V，I_D=-250μA	-55	-62	--	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-50V，V_{GS}=0V	--	--	-1.0	μA
I_{GSS}	Gate-Body Leakage Current	V_{GS}=±20V，V_{DS}=0V	--	--	±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}，I_D=-250μA	1.0	-1.7	-2.5	V
$R_{DS(on)}$	Drain-Source On-State Resistance	V_{GS}=-10V，I_D=-3.0A	--	130	180	mΩ
		V_{GS}=-4.5V，I_D=-1.5A	--	150	250	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C_{ISS}	Input Capacitance	V_{DS}=-25V，V_{GS}=0V，f=1MHz	--	555	--	pF
C_{OSS}	Output Capacitance		--	35	--	pF
C_{RSS}	Reverse Transfer Capacitance		--	30	--	pF
Switching Characteristics						
Q_g	Total Gate Charge	V_{DS}=-25V，I_D=-10A，V_{GS}=-10V	--	20	--	nC
Q_{gs}	Gate Source Charge		--	3	--	nC
Q_{gd}	Gate Drain Charge		--	6.5	--	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=-25V，I_D=-10A，V_{GS}=-10V，R_G=3Ω	--	10	--	nS
t_r	Turn-on Rise Time		--	46	--	nS
$t_{d(off)}$	Turn-Off Delay Time		--	18	--	nS
t_f	Turn-Off Fall Time		--	30	--	nS
Source- Drain Diode Characteristics						
V_{SD}	Forward on voltage	Tj=25℃， Is=-3A	--	--	-1.2	V

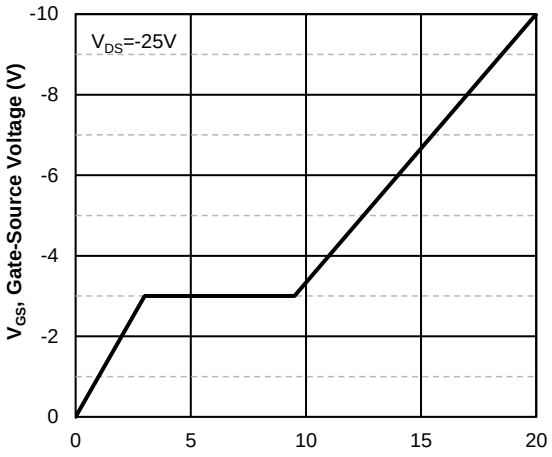
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Typical Operating Characteristics



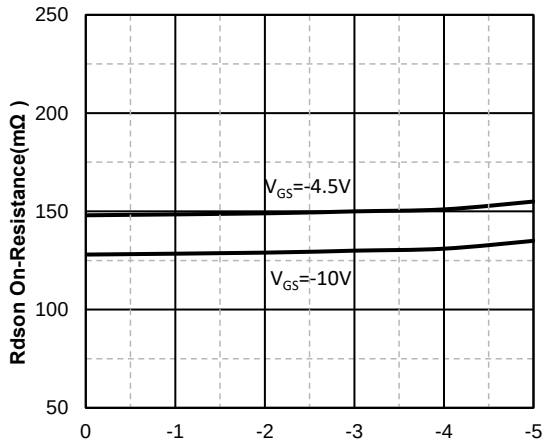
- V_{DS}, Drain -Source Voltage (V)

Fig1. Typical Output Characteristics



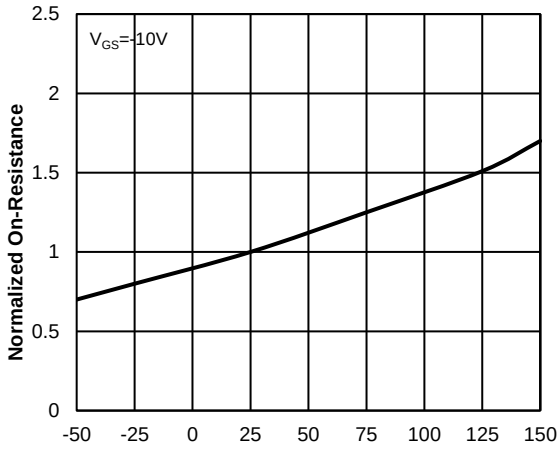
Qg -Total Gate Charge (nC)

Fig2. Typical Gate Charge Vs.Gate-Source Voltage



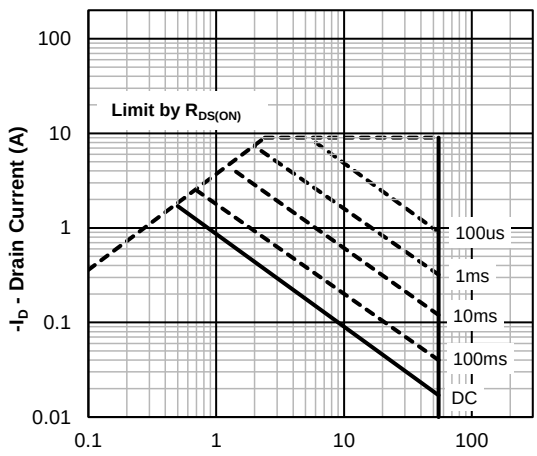
I_D, Drain-Source Current (A)

Fig3. Drain-Source on Resistance



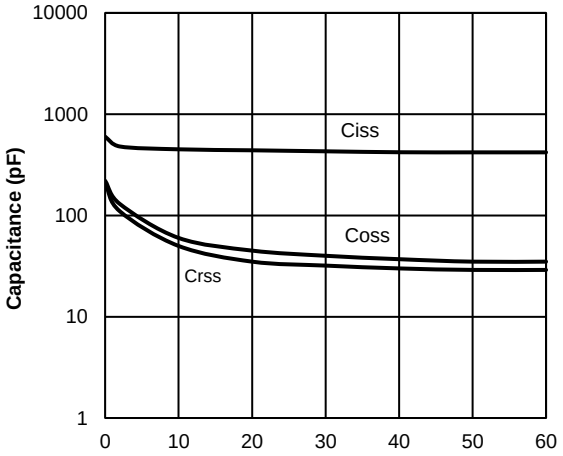
Tj - Junction Temperature (°C)

Fig4. Normalized On-Resistance Vs. Temperature



$-V_{DS}$, Drain -Source Voltage (V)

Fig5. Maximum Safe Operating Area

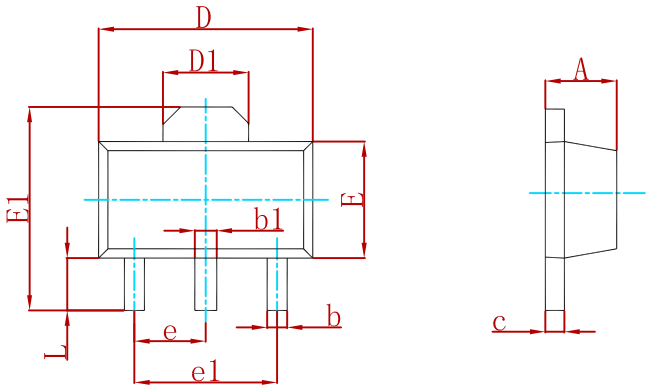


$-V_{DS}$, Drain-Source Voltage (V)

Fig6 Typical Capacitance Vs.Drain-Source Voltage

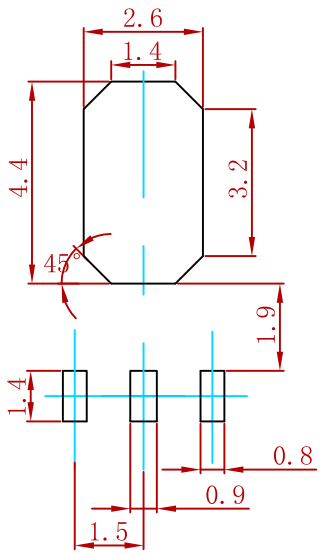
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PACKAGE MECHANICAL DATA



Symbol	Dimensions In Millimeters		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

Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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