

Features

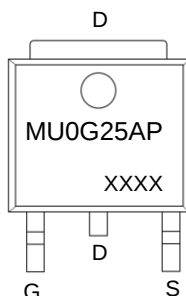
- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Product Summary

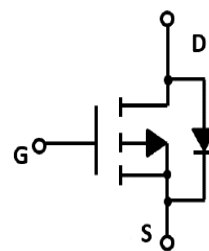
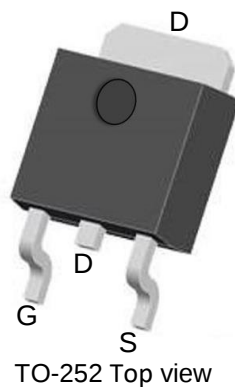
V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
-60V	53mΩ@-10V	-25A
	70mΩ@-4.5V	

Application

- PWM applications
- Power management
- Load switch



MU0G25AP: Device code
XXXX : Code



Schematic diagram

Marking and pin assignment

Absolute Maximum Ratings (TA=25°C 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	-25	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	-110	A
I _D	Continuous Drain Current	Tc=25°C	-25	A
P _D	Maximum Power Dissipation	Tc=25°C	80	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		50	°C/W

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	VGS=0V, ID=-250μA	-60	--	--	V
Idss	Zero Gate Voltage Drain Current	VDS=-60V, VGS=0V	--	--	-1	uA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=-250μA	-1.0	-1.7	-2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=-10V, ID=-20A	--	43	53	mΩ
		VGS=-4.5V, ID=-10A	--	50	70	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
Ciss	Input Capacitance	VDS=-30V, VGS=0V, f=1MHz	--	1650	--	pF
Coss	Output Capacitance		--	95	--	pF
Crss	Reverse Transfer Capacitance		--	75	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=-30V, ID=-9A, VGS=-10V	--	30	--	nC
Qgs	Gate Source Charge		--	3.5	--	nC
Qgd	Gate Drain Charge		--	7.7	--	nC
td(on)	Turn-on Delay Time	VDD=-30V, ID=-20A, VGS=-10V, RG=3Ω	--	11	--	nS
tr	Turn-on Rise Time		--	14	--	nS
td(off)	Turn-Off Delay Time		--	33	--	nS
tf	Turn-Off Fall Time		--	13	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25℃, Is=-20A,	--	--	-1.2	V

Typical Operating Characteristics

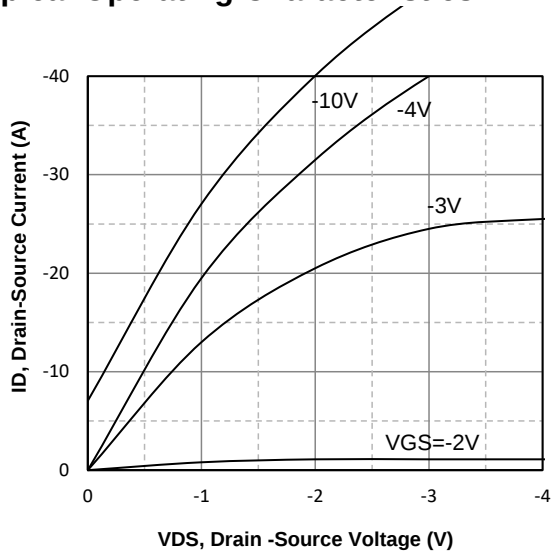


Fig1. Typical Output Characteristics

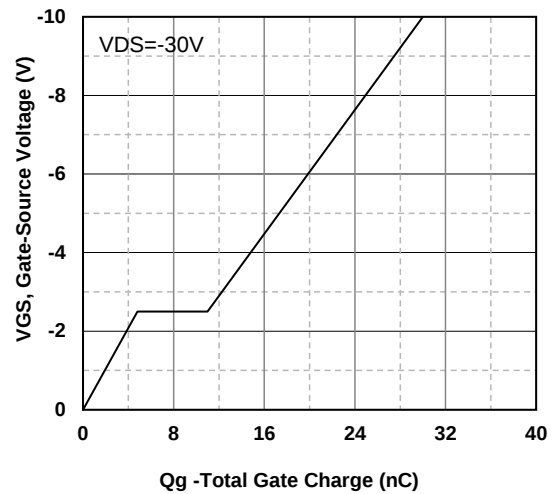


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

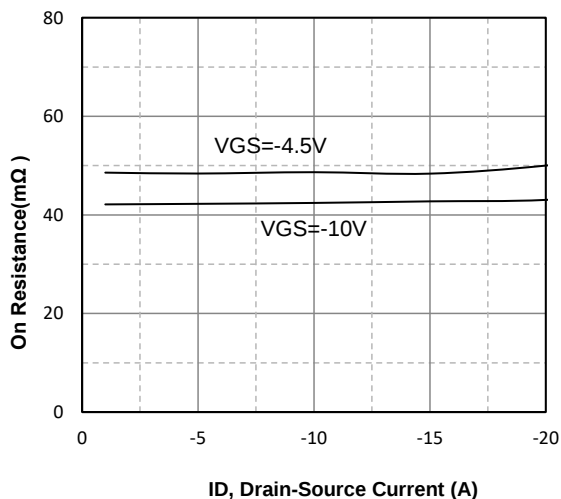


Fig3. Drain-Source on Resistance

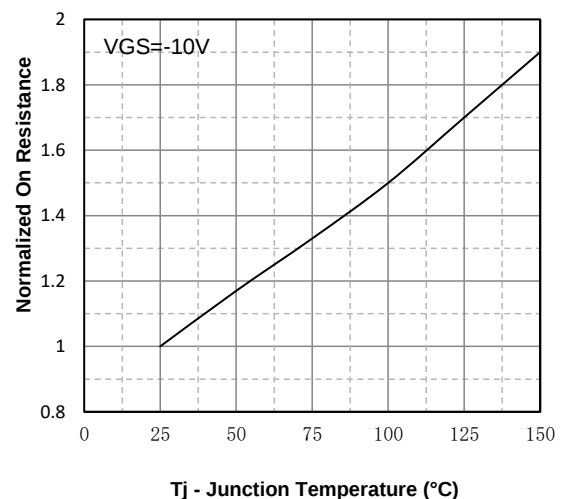


Fig4. Normalized On-Resistance Vs. Temperature

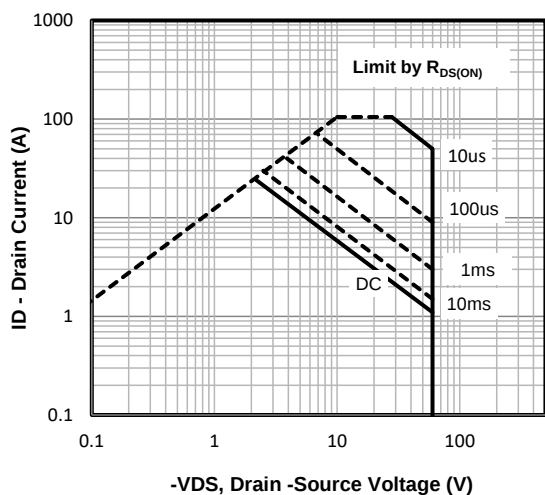


Fig5. Maximum Safe Operating Area

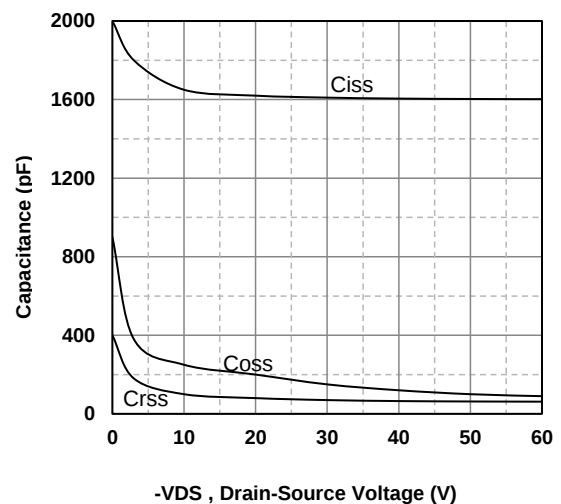
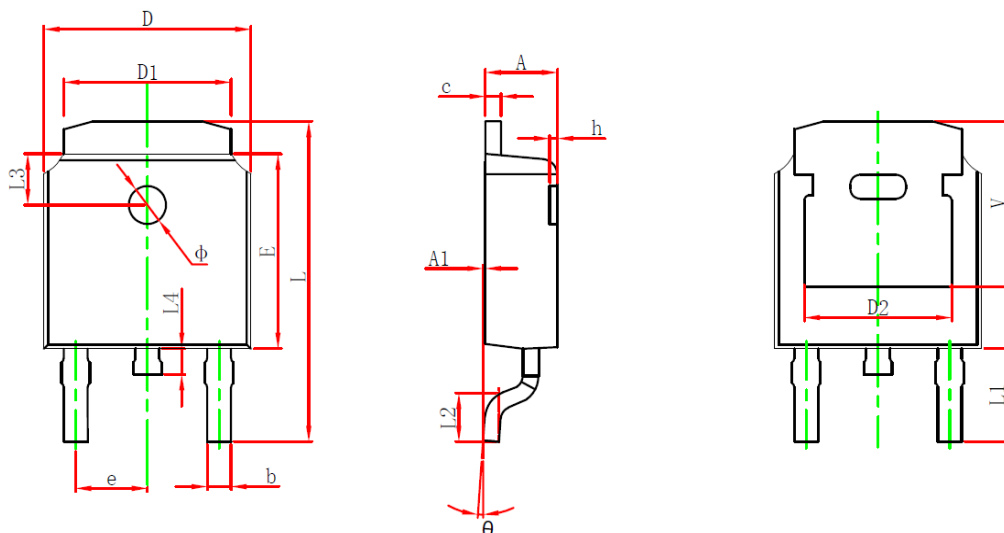


Fig6 Typical Capacitance Vs. Drain-Source Voltage

TO-252 Package information


Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.450	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.386	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	