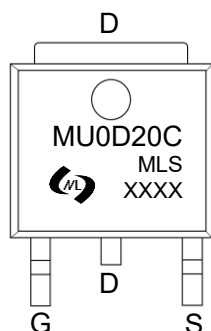


Features

- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching

Application

- Battery protection
- Load switch
- Power management



MU0D20C: Device code
XXXX : Code

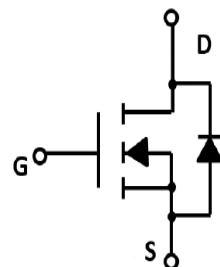
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
30V	19mΩ@10V	20A
	23mΩ@4.5V	



TO-252 top view



Schematic diagram



Pb-Free



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
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Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	30	V
V_{GS}	Gate-Source Voltage	±12	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ 20	A

Mounted on Large Heat Sink

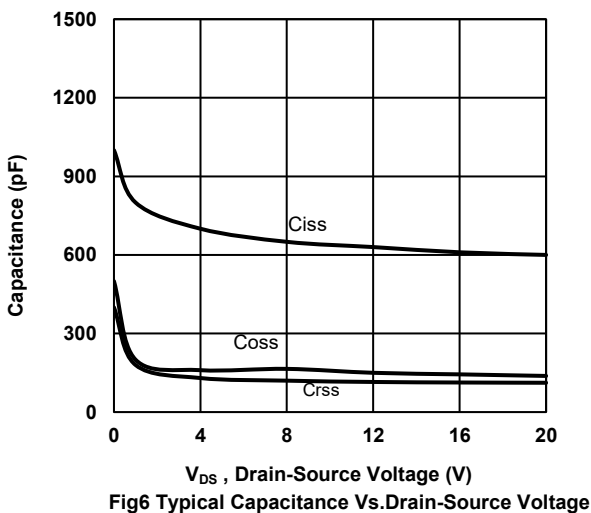
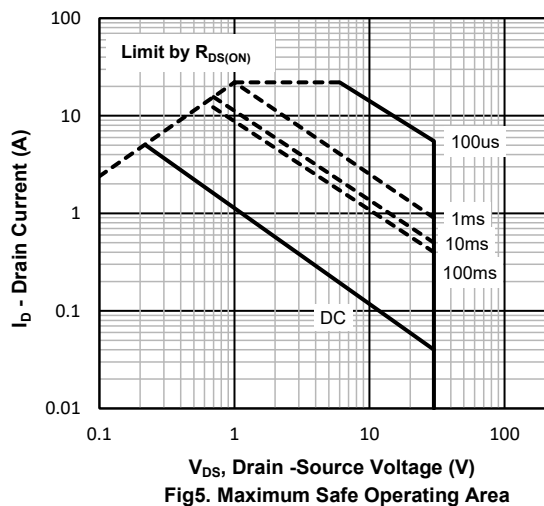
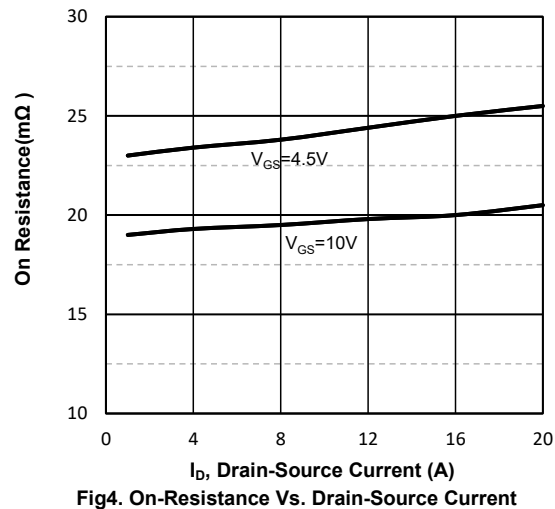
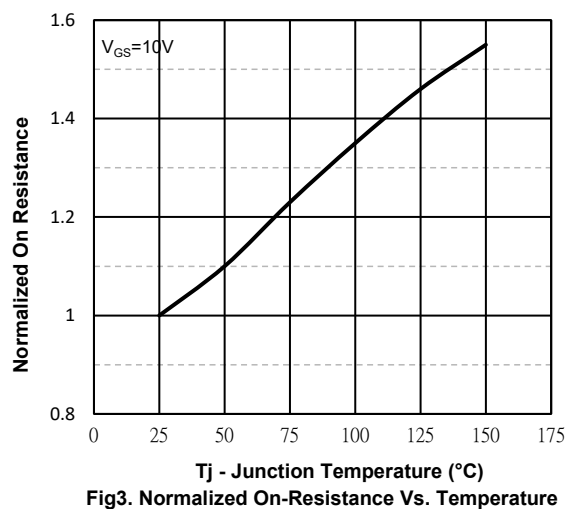
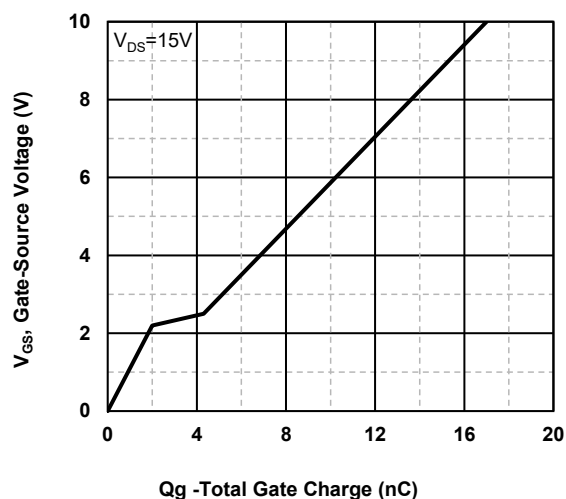
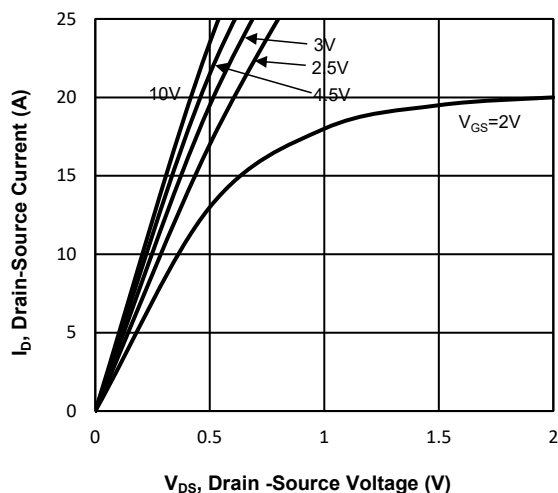
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ 80	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ 20	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 1.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	104	°C/W

Ordering Information (Example)

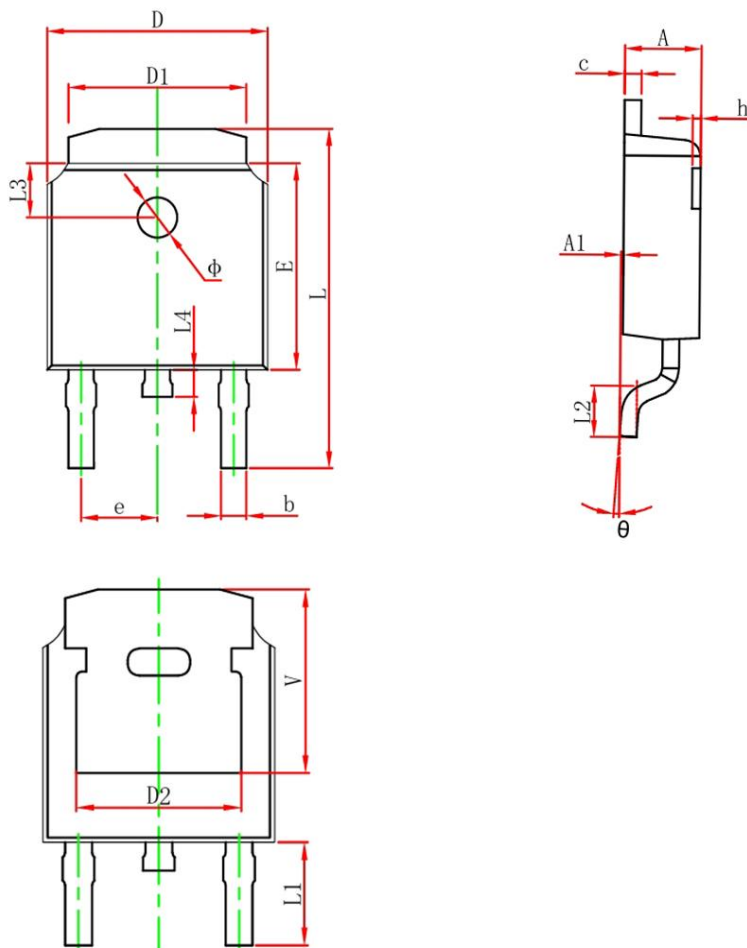
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MU0D20C	TO-252	MU0D20C	2,500	5,000	35,000	13"reel

Electrical Characteristics (TJ=25°C 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	30	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=30V, VGS=0V	--	--	1	μA
IGSS	Gate-Body Leakage Current	VGS=±12V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	0.65	0.95	1.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=10A	--	19	28	mΩ
		VGS=4.5V, ID=6A	--	23	35	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=15V, VGS=0V, f=1MHz	--	632	--	pF
COSS	Output Capacitance		--	58	--	pF
CRSS	Reverse Transfer Capacitance		--	70	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=15V, ID=8A, VGS=10V	--	17.3	--	nC
Qgs	Gate Source Charge		--	2.2	--	nC
Qgd	Gate Drain Charge		--	2.1	--	nC
td(on)	Turn-on Delay Time	VDD=15V, ID=8A, VGS=10V, RG=3Ω	--	4.4	--	nS
tr	Turn-on Rise Time		--	28.3	--	nS
td(off)	Turn-Off Delay Time		--	16.5	--	nS
tf	Turn-Off Fall Time		--	26.3	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	Tj=25°C, Is=20A	--	--	1.2	V

Typical Operating Characteristics



SOT-89-3L 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.	