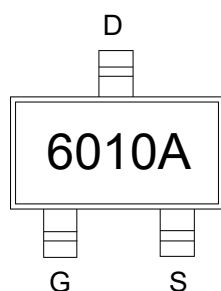


Features

- Low $R_{DS(on)}$ & FOM
- Extremely low switching loss
- Split gate trench MOSFET technology
- Fast switching and soft recovery

Application

- Consumer electronic power supply
- Motor control
- Synchronous-rectification
- Isolated DC/DC convertor



6010A: Device code

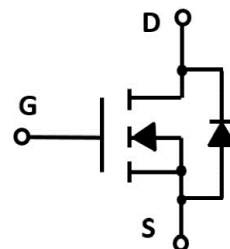
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
60V	12mΩ@10V	10A
	16mΩ@4.5V	



SOT-23-3L 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		60	V
V_{GS}	Gate-Source Voltage		±20	V
T_J	Maximum Junction Temperature		150	°C
T_{STG}	Storage Temperature Range		-50 to 155	°C
I_S	Diode Continuous Forward Current	$T_c=25^{\circ}C$	10	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^{\circ}C$	40	A
I_D	Continuous Drain Current	$T_c=25^{\circ}C$	10	A
P_D	Maximum Power Dissipation	$T_c=25^{\circ}C$	1.96	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		83.5	°C/W

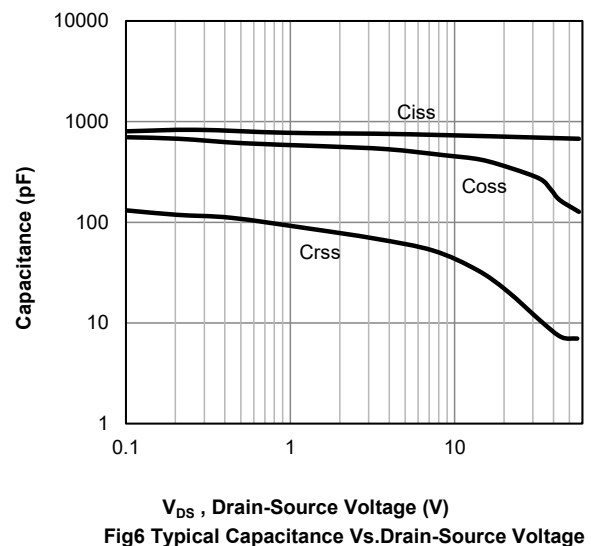
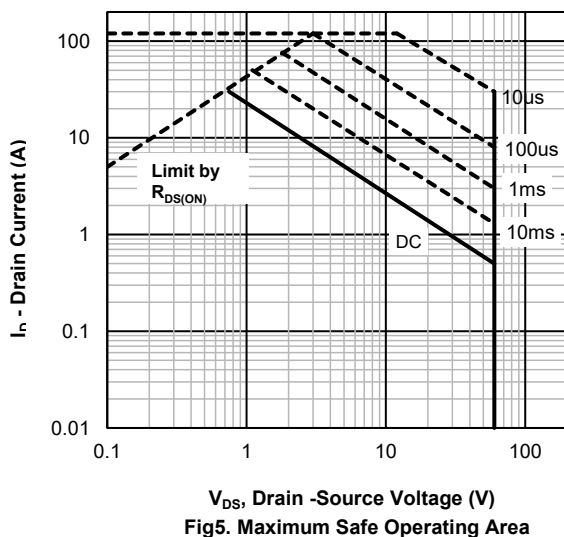
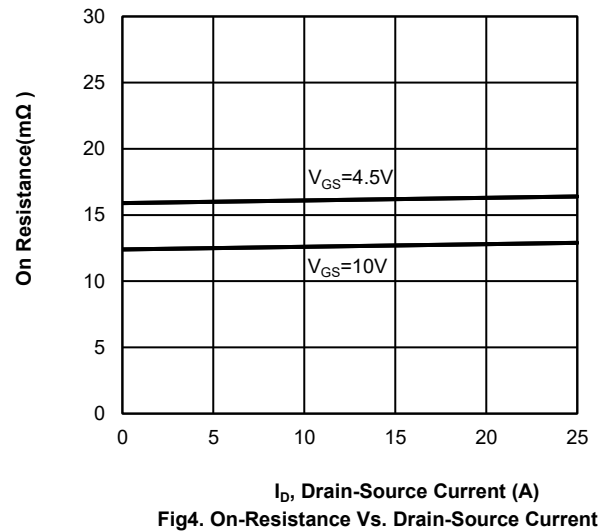
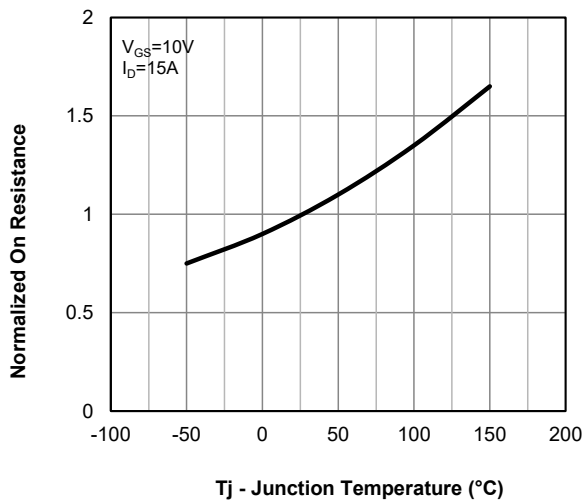
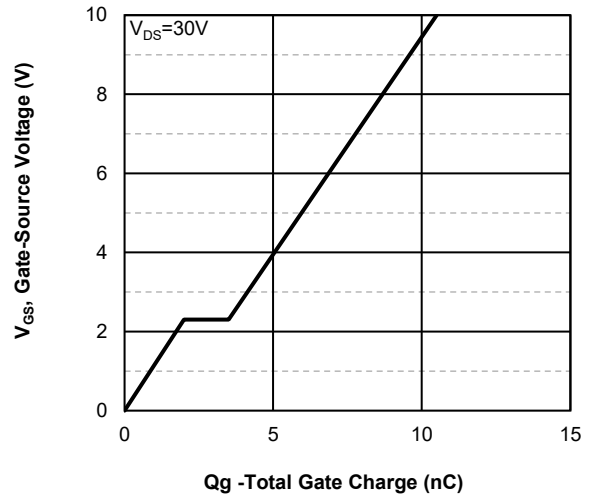
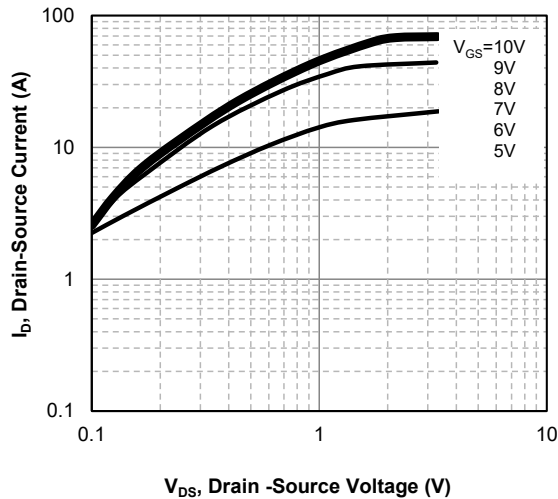
Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLSK6010A	SOT-23-3L	6010A	3,000	45,000	180,000	7"reel

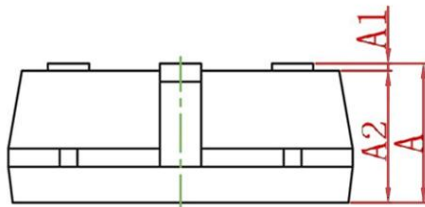
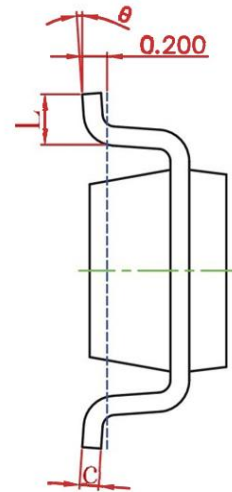
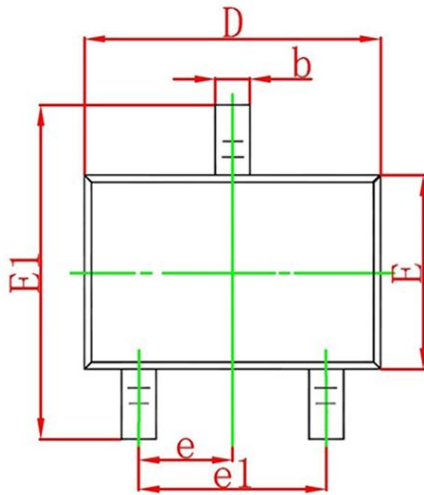
Electrical Characteristics (T_J=25°C unless otherwise noted)

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	60	--	--	V
IDSS	Zero Gate Voltage Drain Current	VDS=60V, VGS=0V	--	--	1.0	μA
IGSS	Gate-Body Leakage Current	VGS=±20V, VDS=0V	--	--	±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS, ID=250μA	1.0	1.5	2.5	V
RDS(on)	Drain-Source On-State Resistance	VGS=10V, ID=15A	--	12	16	mΩ
		VGS=4.5V, ID=10A	--	16	25	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
CISS	Input Capacitance	VDS=30V, VGS=0V, f=1MHz	--	610	--	pF
COSS	Output Capacitance		--	210	--	pF
CRSS	Reverse Transfer Capacitance		--	9	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDS=30V, ID=10A, VGS=10V	--	9.5	--	nC
Qgs	Gate Source Charge		--	4.2	--	nC
Qgd	Gate Drain Charge		--	1.3	--	nC
td(on)	Turn-on Delay Time	VDS=30V, ID=10A, VGS=10V, RG=3Ω	--	3.5	--	nS
tr	Turn-on Rise Time		--	10.8	--	nS
td(off)	Turn-Off Delay Time		--	9.6	--	nS
tf	Turn-Off Fall Time		--	4.3	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25°C, IS=10A	--	--	1.2	V

Typical Operating Characteristics



SOT-23-3L Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.042	0.050
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.042	0.046
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.112	0.120
E	1.500	1.700	0.060	0.068
E1	2.650	2.950	0.106	0.118
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°