

Features

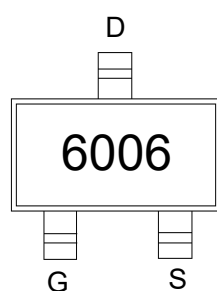
- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

Application

- Power switching application

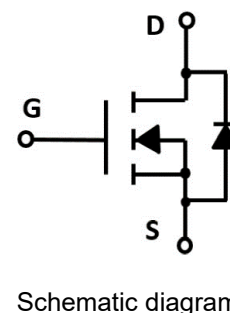
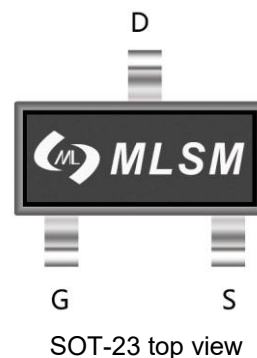
Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
60V	25mΩ@10V	6A
	34mΩ@4.5V	



6006: Device code

Marking and pin assignment



Halogen-Free

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

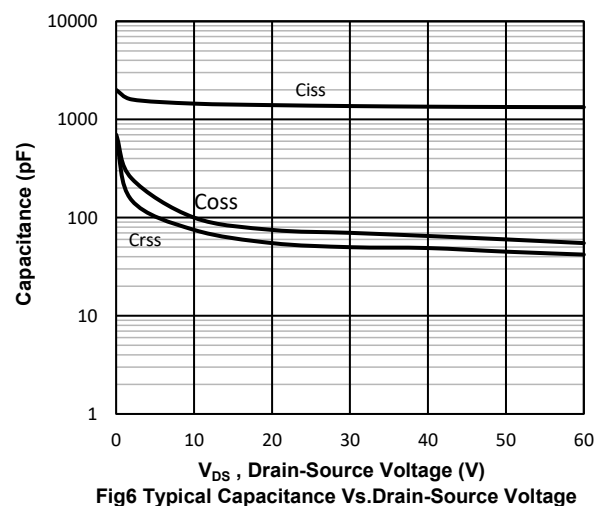
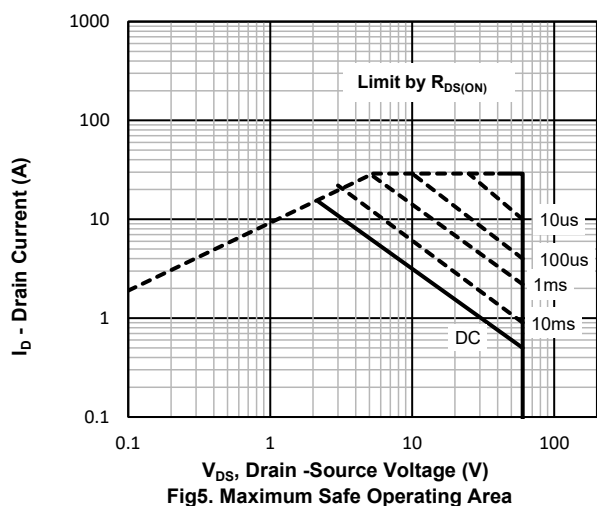
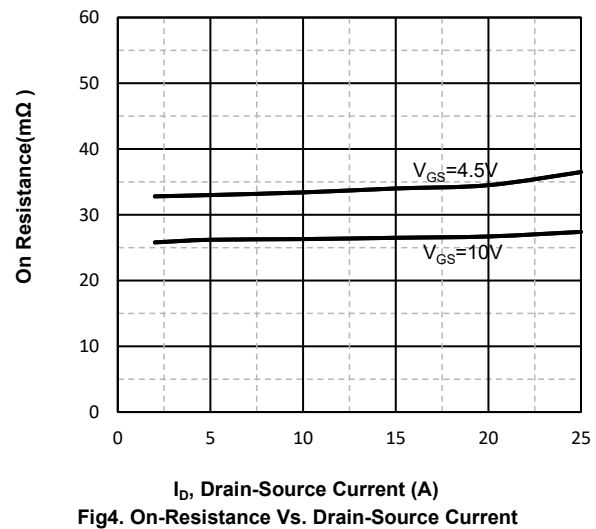
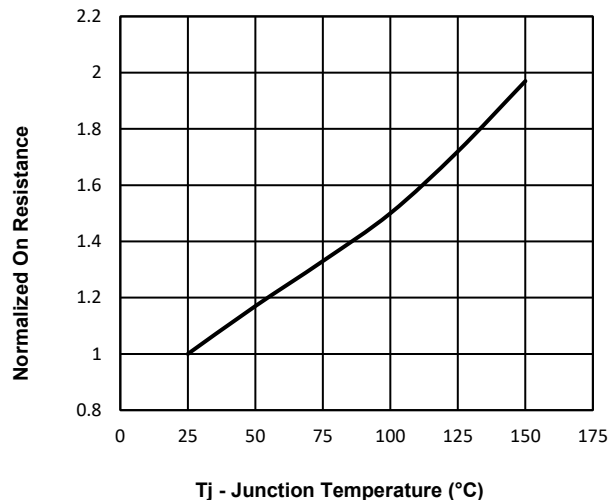
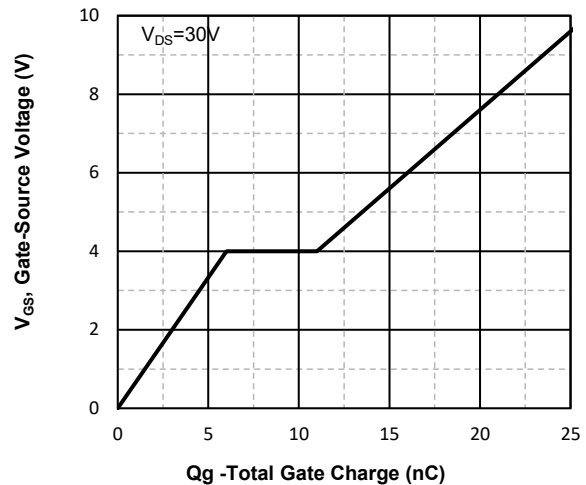
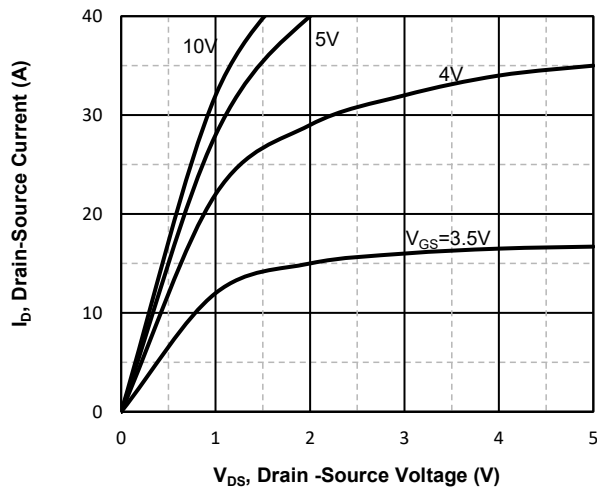
Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		60	V
V _{GS}	Gate-Source Voltage		±20	V
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range		-50 to 155	°C
I _S	Diode Continuous Forward Current	Tc=25°C	6	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	28.3	A
I _D	Continuous Drain Current	Tc=25°C	6	A
P _D	Maximum Power Dissipation	Tc=25°C	2.2	W
R _{θJA}	Thermal Resistance Junction-Ambient		83.5	°C/W

Ordering Information (Example)

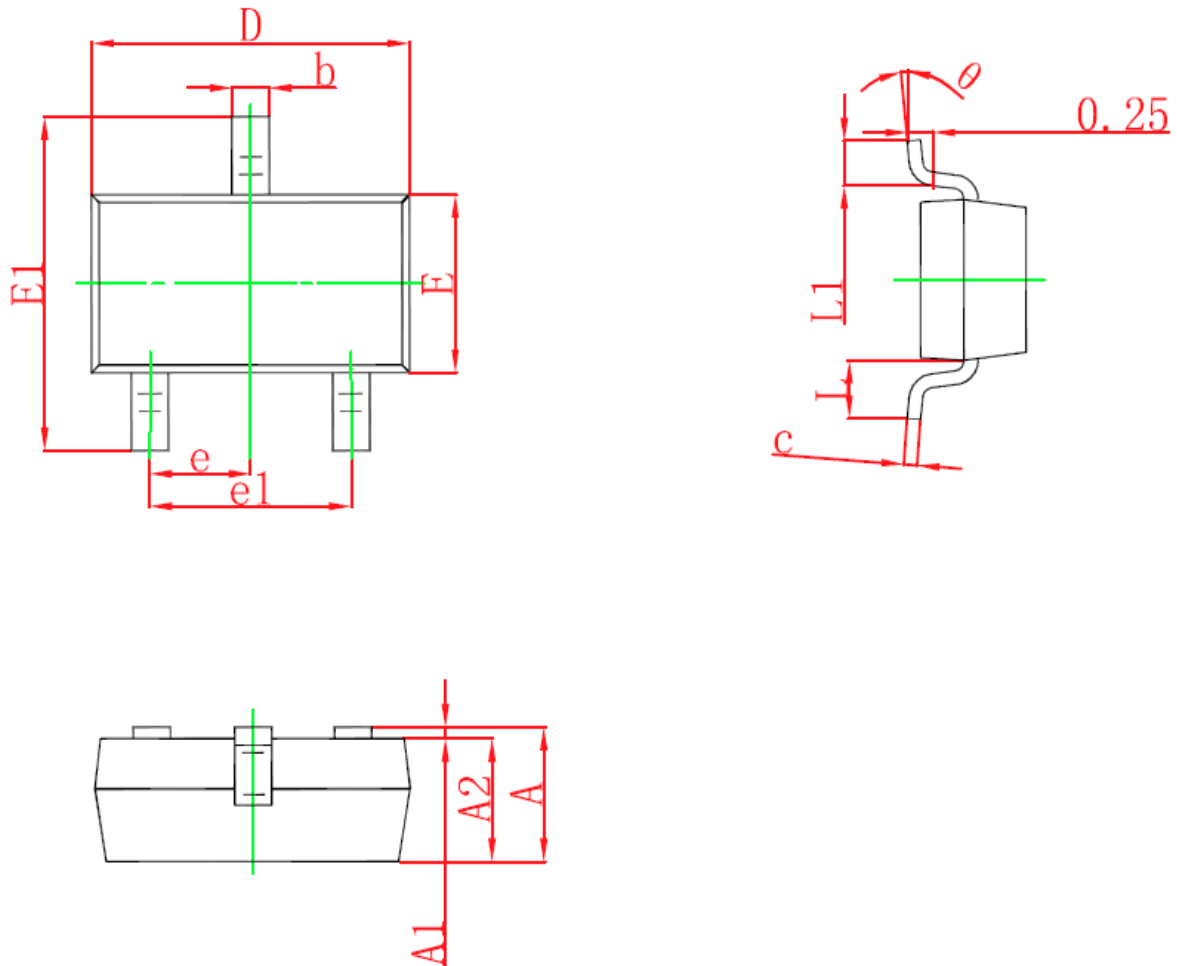
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLS6006	SOT-23	6006	3,000	45,000	180,000	7"reel

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	μA
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=6A	--	25	34	mΩ
		VGS=4.5V, ID=5A	--	34	45	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	VDS=30V, VGS=0V, f=1MHz	--	1050	--	pF
COSS	Output Capacitance		--	65	--	pF
CRSS	Reverse Transfer Capacitance		--	55	--	pF
Switching Characteristics						
Qg	Total Gate Charge	VDD=30V, ID=6A, VGS=10V	--	26	--	nC
Qgs	Gate Source Charge		--	5.7	--	nC
Qgd	Gate Drain Charge		--	5.2	--	nC
td(on)	Turn-on Delay Time	VDD=30V, ID=6A, VGS=10V, RG=3Ω	--	8.4	--	nS
tr	Turn-on Rise Time		--	8.5	--	nS
td(off)	Turn-Off Delay Time		--	36	--	nS
tf	Turn-Off Fall Time		--	5	--	nS
Source- Drain Diode Characteristics						
VSD	Forward on voltage	TJ=25℃, IS=6A	--	--	1.2	V

Typical Operating Characteristics



SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°