

Features

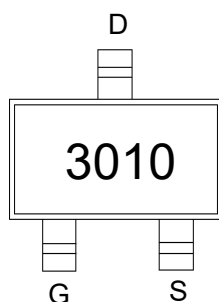
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
30V	8.0mΩ@10V	10A
	11mΩ@4.5V	

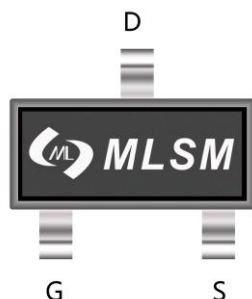
Application

- Power switching application

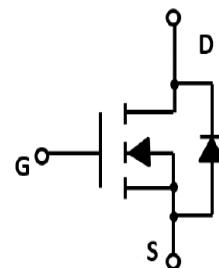


3010: Device code

Marking and pin assignment



SOT-23 top view



Schematic diagram



Pb-Free



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	30	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	$T_c=25^\circ\text{C}$ 10	A

Mounted on Large Heat Sink

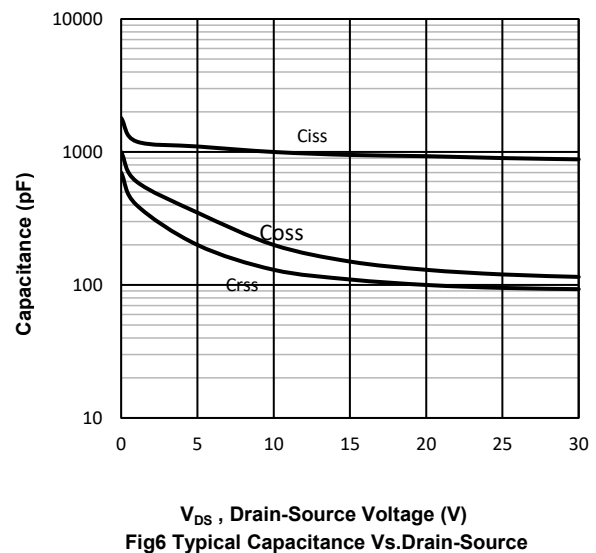
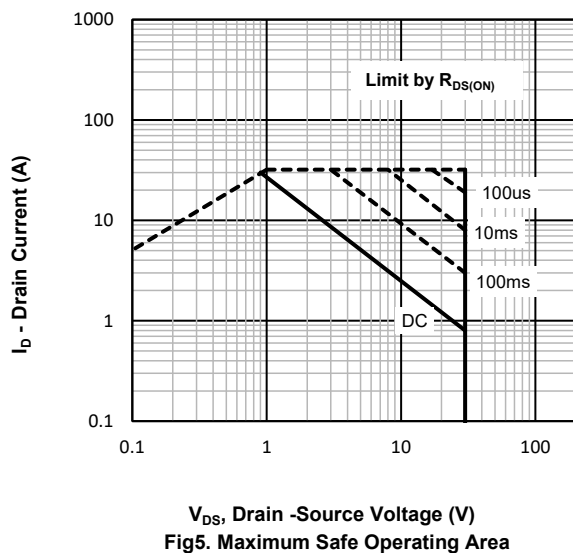
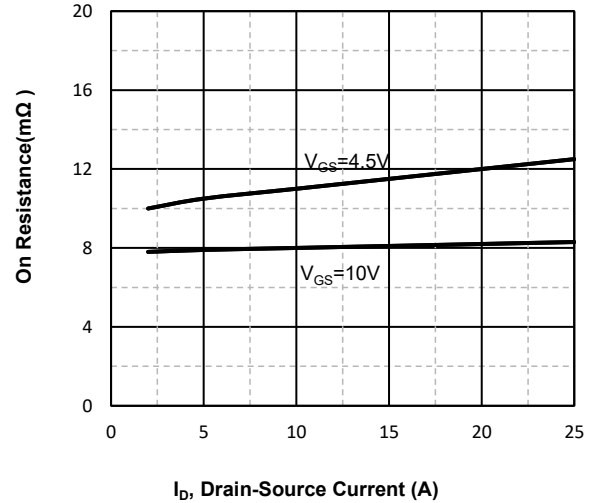
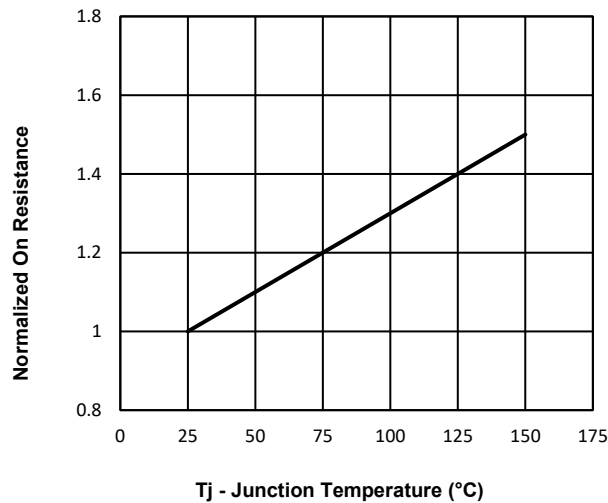
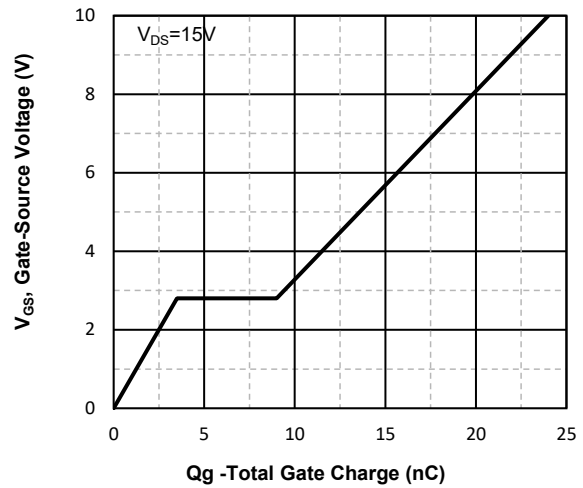
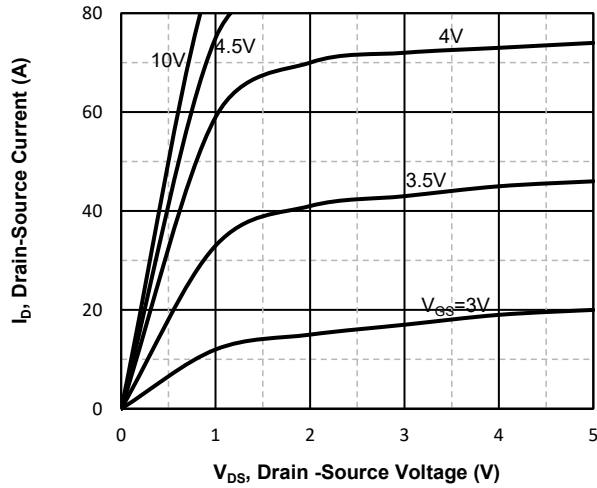
I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ 32	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$ 10	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 1.1	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	135	°C/W

Ordering Information (Example)

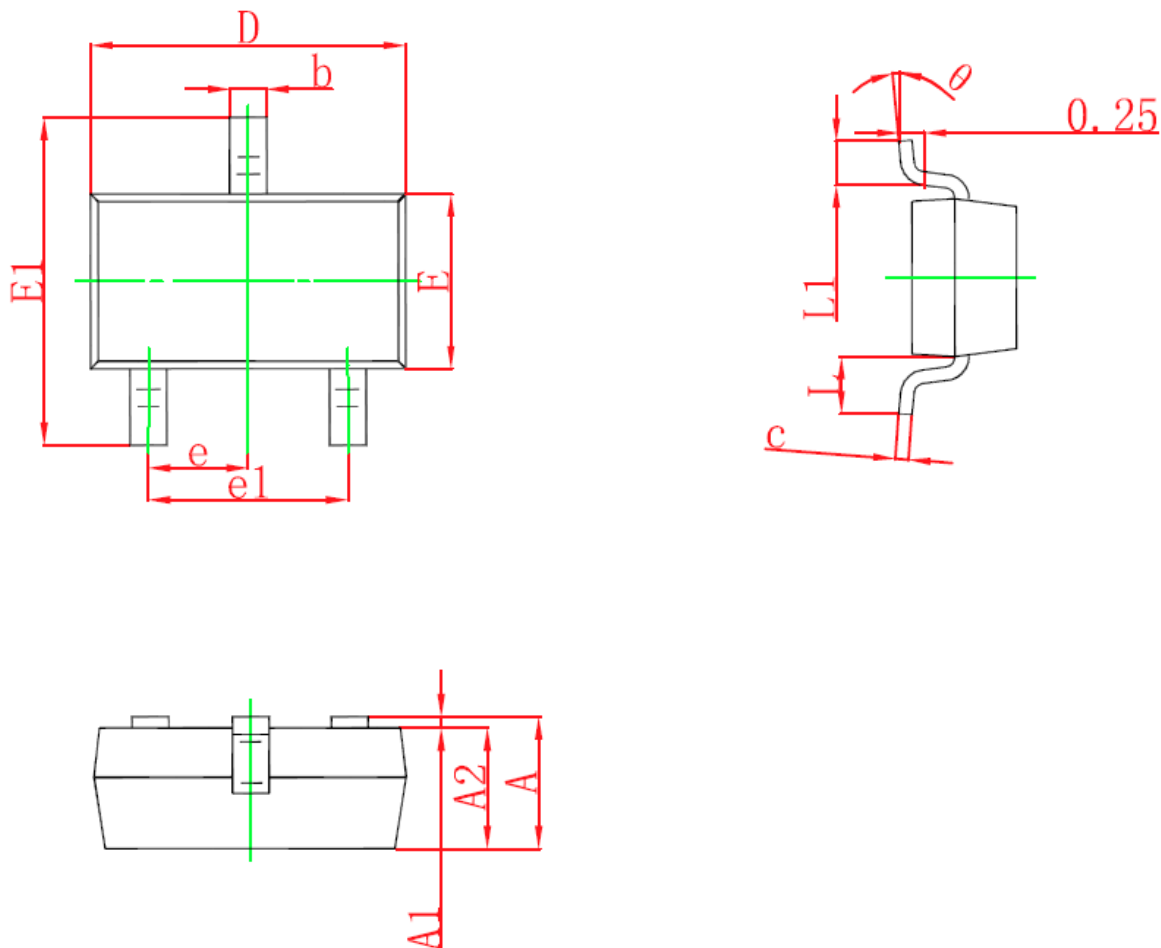
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MLS3010	SOT-23	3010	3,000	45,000	180,000	7"reel

Electrical Characteristics (T _J =25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ T _J = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	30	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =30V, 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	1.5	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =10A	--	8	11	mΩ
		V _{GS} =4.5V, I _D =5A	--	11	15	mΩ
Dynamic Electrical Characteristics @ T _J = 25℃ (unless otherwise stated)						
CISS	Input Capacitance	V _{DS} =15V, V _{GS} =0V, f=1MHz	--	1055	--	pF
COSS	Output Capacitance		--	180	--	pF
CRSS	Reverse Transfer Capacitance		--	130	--	pF
Switching Characteristics						
Qg	Total Gate Charge	V _{DS} =15V, I _D =6A, V _{GS} =10V	--	25	--	nC
Qgs	Gate Source Charge		--	3.5	--	nC
Qgd	Gate Drain Charge		--	6	--	nC
td(on)	Turn-on Delay Time	V _{DS} =15V, R _L =1.8Ω, V _{GS} =10V, R _G =3Ω	--	5	--	nS
tr	Turn-on Rise Time		--	12	--	nS
td(off)	Turn-Off Delay Time		--	19	--	nS
tf	Turn-Off Fall Time		--	6	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25℃, I _S =10A	--	0.75	1.0	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
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°