

Features

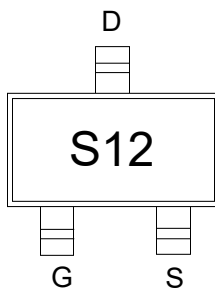
- Trench Power LV MOSFET technology
- High Power and current handing capability

Product Summary

V_{DS}	$R_{DS(ON)}$ MAX	I_D MAX
8V	17mΩ@4.5V	6A
	20mΩ@2.5V	

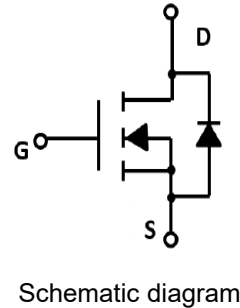
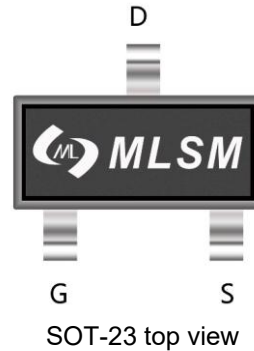
Application

- PWM application
- Load switch



S12: 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		8	V
V _{GS}	Gate-Source Voltage		±5	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	2.1	A

Mounted on Large Heat Sink

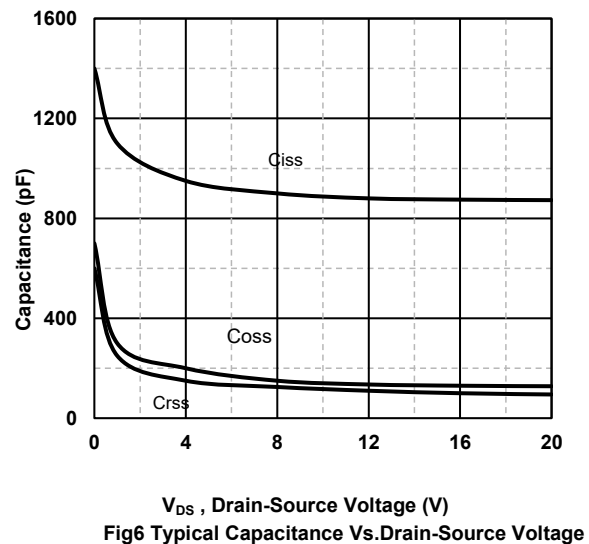
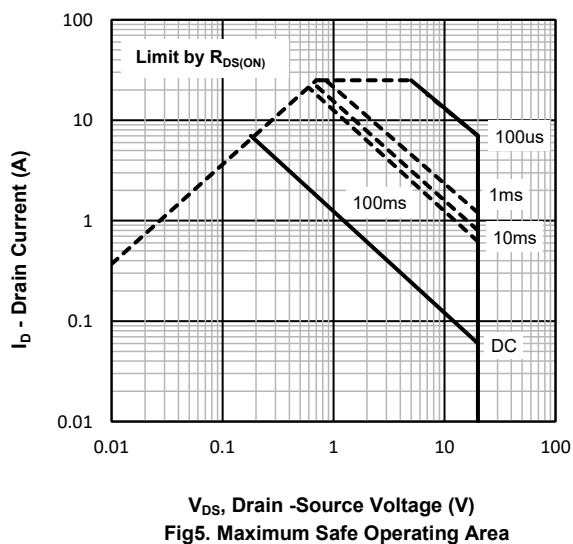
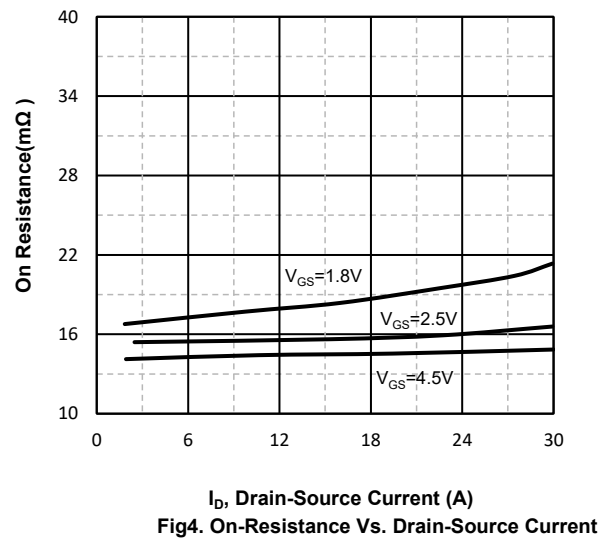
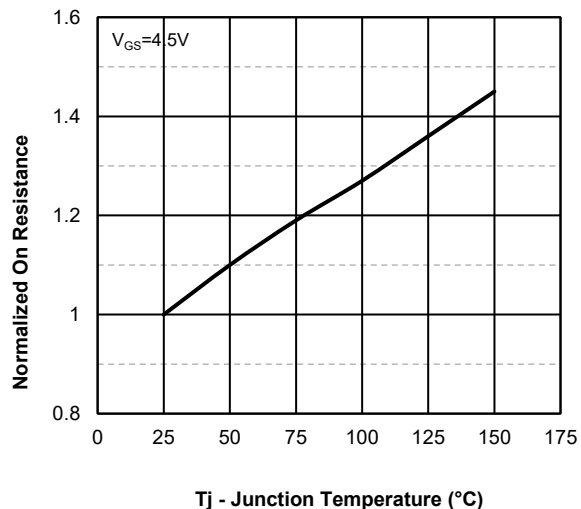
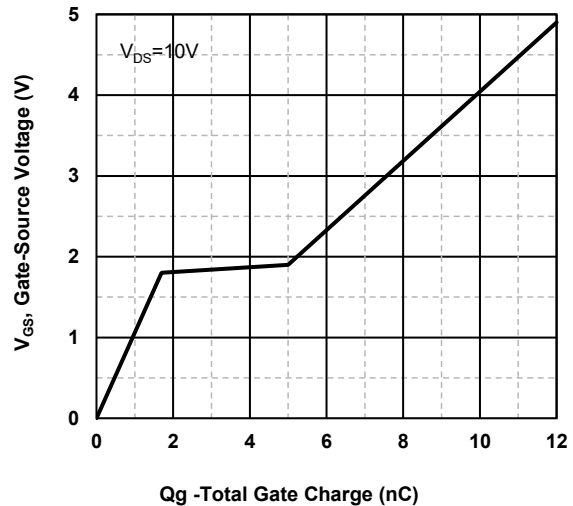
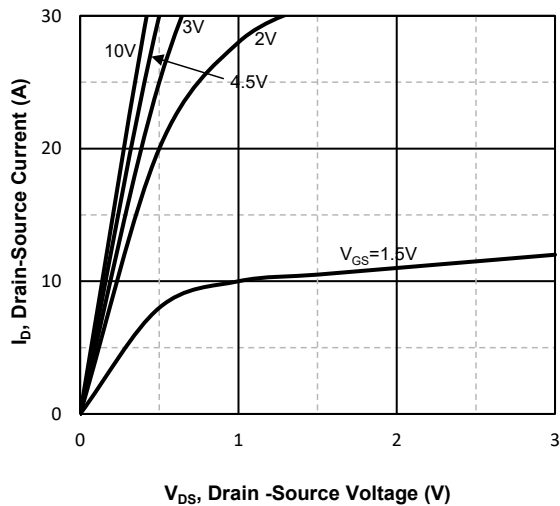
I_{DM}	Pulse Drain Current Tested	$T_C=25^{\circ}C$	30	A
I_D	Continuous Drain Current	$T_C=25^{\circ}C$	6	A
P_D	Maximum Power Dissipation	$T_C=25^{\circ}C$	2.5	W
$R_{\theta JA}$	Thermal Resistance Junction-to-Ambient		100	°C/ W

Ordering Information (Example)

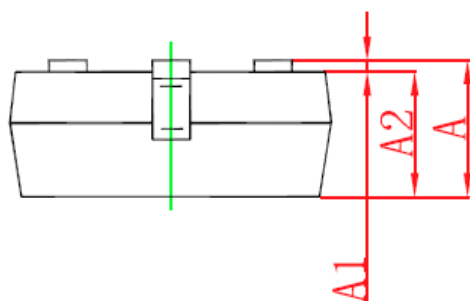
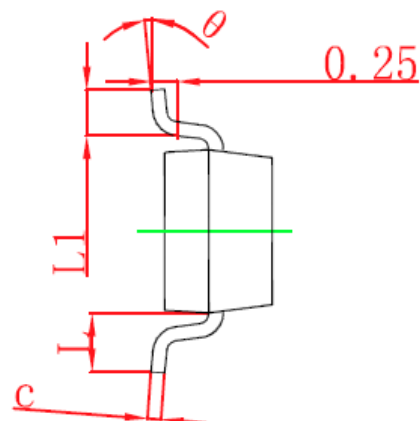
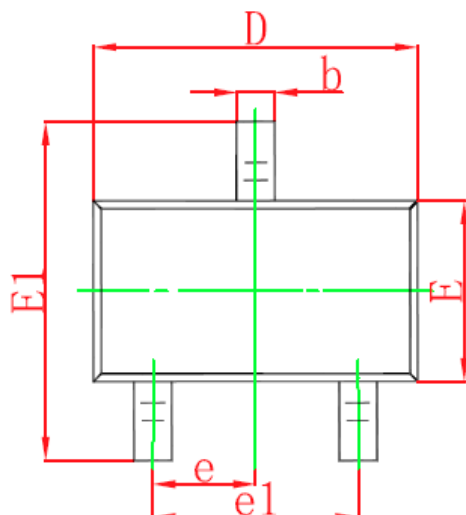
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
Si2342DS	SOT-23	S12	3,000	45,000	180,000	7"reel

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	V _{GS} =0V, I _D =250μA	8	–	–	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =8V, V _{GS} =0V	–	–	1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±5V, V _{DS} =0V	–	–	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.35	–	0.80	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =4.5V, I _D =7.2A	–	14	17	mΩ
		V _{GS} =2.5V, I _D =6.7A	–	16	20	mΩ
		V _{GS} =1.8V, I _D =6.4A	–	18	22	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =4V, V _{GS} =0V, f=1MHz	–	1070	–	pF
C _{OSS}	Output Capacitance		–	385	–	pF
C _{RSS}	Reverse Transfer Capacitance		–	200	–	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =4V, I _D =7.2A, V _{GS} =2.5V	–	6	–	nC
Q _{gs}	Gate Source Charge		–	1.6	–	nC
Q _{gd}	Gate Drain Charge		–	1	–	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =4V, R _L =0.7Ω, I _D =5.8A V _{GS} =4.5V, R _G =1Ω	–	6	–	nS
t _r	Turn-on Rise Time		–	14	–	nS
t _{d(off)}	Turn-Off Delay Time		–	65	–	nS
t _f	Turn-Off Fall Time		–	25	–	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	T _J =25°C, I _S =5.8A	–	0.82	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°