

Features

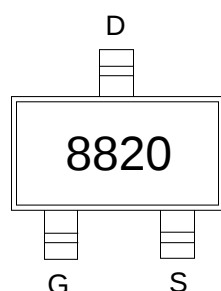
- High Power and current handing capability
- Lead free product is acquired
- Surface mount package

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
20V	16.7m Ω @10V	7A
	18.7m Ω @4.5V	

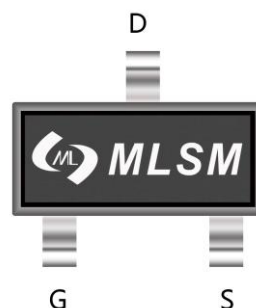
Application

- Load Switch
- PWM Application
- Power

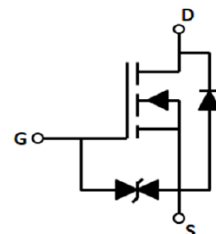


8820: Device code

Marking and pin assignment



SOT-23 top view



Schematic diagram



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		20	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	Tc=25°C	7	A
Mounted on Large Heat Sink				
I _{DM}	Pulse Drain Current Tested	Tc=25°C	30	A
I _D	Continuous Drain Current	Tc=25°C	7	A
P _D	Maximum Power Dissipation	Tc=25°C	1.4	W
R _{θJA}	Thermal Resistance Junction-to-Ambient		125	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
CJ8820	SOT-23	8820	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	V _{GS} =0V, I _D =250μA	20	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =16V, V _{GS} =0V	--	--	1.0	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±10V, V _{DS} =0V	--	--	±10	μA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	0.5	--	1.1	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =7A	--	16.7	21	mΩ
		V _{GS} =4.5V, I _D =6.6A	--	18.7	24	mΩ
		V _{GS} =3.8V, I _D =6A	--	19.7	28	mΩ
		V _{GS} =2.5V, I _D =5.5A	--	24.5	32	mΩ
		V _{GS} =1.8V, I _D =2A	--	34	50	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	660	--	pF
C _{OSS}	Output Capacitance		--	160	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	90	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =10V, I _D =6.5A, V _{GS} =4.5V	--	8	--	nC
Q _{gs}	Gate Source Charge		--	2.5	--	nC
Q _{gd}	Gate Drain Charge		--	3	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =0.5A, V _{GS} =4.5V, R _G =10Ω	--	0.5	--	nS
t _r	Turn-on Rise Time		--	1	--	nS
t _{d(off)}	Turn-Off Delay Time		--	12	--	nS
t _f	Turn-Off Fall Time		--	4	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=7A	--	--	1.2	V

Typical Operating Characteristics

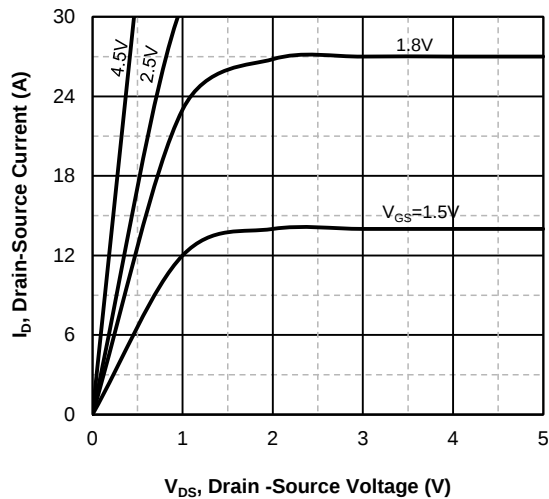


Fig1. Typical Output Characteristics

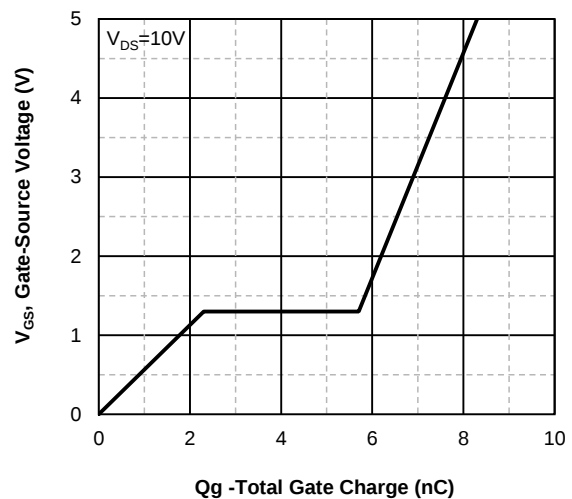


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

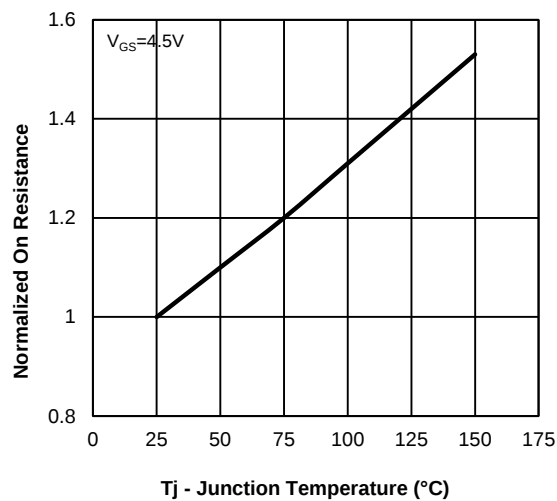


Fig3. Normalized On-Resistance Vs. Temperature

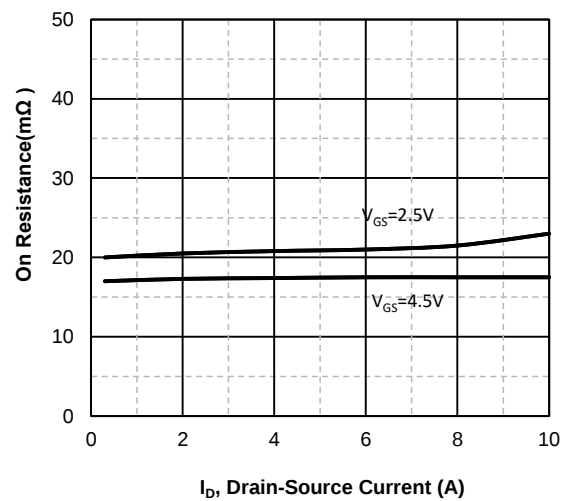


Fig4. On-Resistance Vs. Drain-Source Current

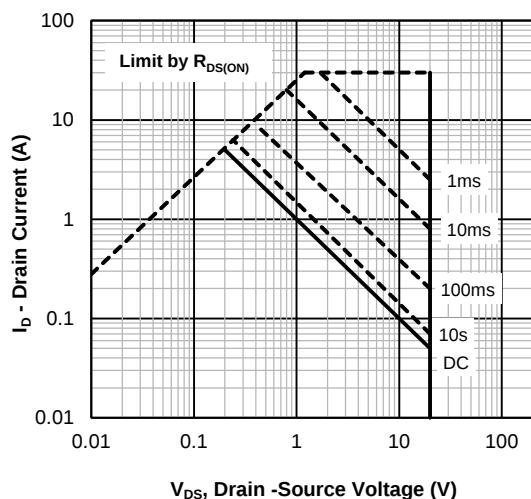


Fig5. Maximum Safe Operating Area

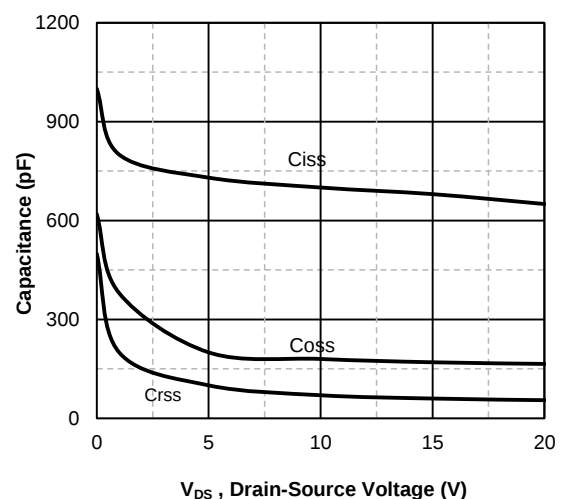
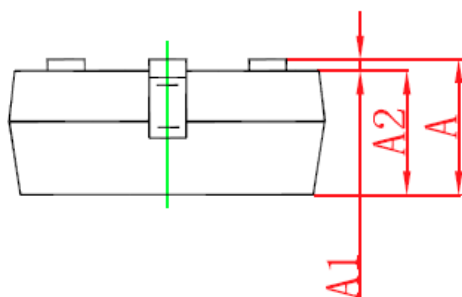
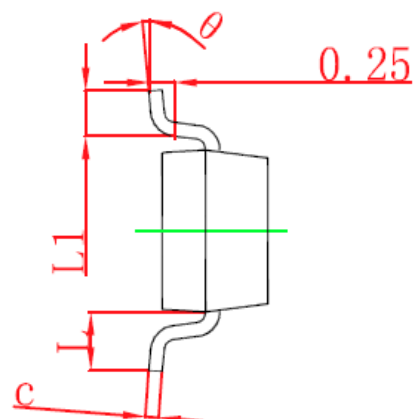
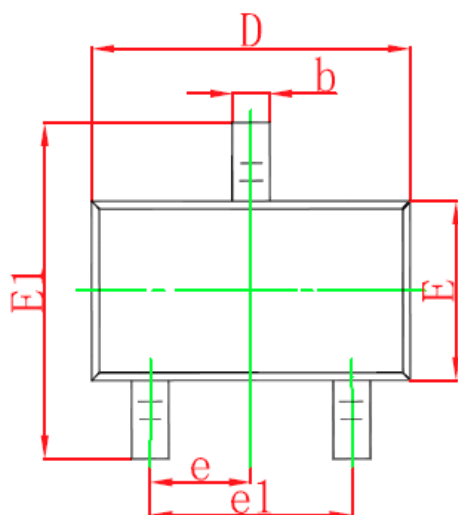


Fig6 Typical Capacitance Vs. Drain-Source

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°