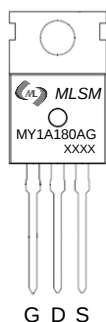


Features

- Advanced SGT technology
- Enhanced Body diode DV/DT capability
- Enhanced Avalanche Ruggedness
- 100% UIS Tested, 100% Rg Tested
- Lead Free, Halogen Free

Application

- DC/DC Converter
- Motor Drivers
- Ideal for high-frequency switching and synchronous rectification



MY1A180AG : Device code
 XXXX : Code

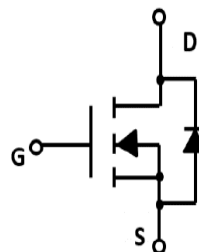
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
100V	4.0mΩ@10V	180A
	6.5mΩ@4.5V	



TO-220 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	100	V
V_{GS}	Gate-Source Voltage	±20	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 180	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	Tc=25°C 600	A
I_D	Continuous Drain Current	Tc=25°C 180	A
P_D	Maximum Power Dissipation	Tc=25°C 171	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	62.5	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)
MY1A180AG	TO-220	MY1A180AG	50	1,000	5,000

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	V _{GS} =0V, I _D =250μA	100	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =100V, 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	1.8	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =30A	--	4.0	5.5	mΩ
		V _{GS} =4.5V, I _D =20A	--	6.5	9.5	mΩ
Dynamic Electrical Characteristics @ TJ = 25°C (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =50V, V _{GS} =0V, f=1MHz	--	3930	--	pF
C _{OSS}	Output Capacitance		--	1650	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	35	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =50V, I _D =20A, V _{GS} =10V	--	65	--	nC
Q _{gs}	Gate Source Charge		--	15.5	--	nC
Q _{gd}	Gate Drain Charge		--	10.5	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =50V, I _D =20A, V _{GS} =10V, R _G =2.2Ω	--	17.5	--	nS
t _r	Turn-on Rise Time		--	35	--	nS
t _{d(off)}	Turn-Off Delay Time		--	43.5	--	nS
t _f	Turn-Off Fall Time		--	61.5	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25°C, Is=30A	--	0.8	1.2	V

Typical Operating Characteristics

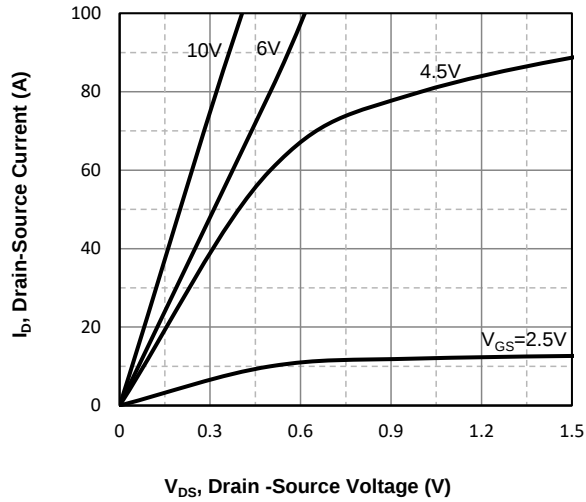


Fig1. Typical Output Characteristics

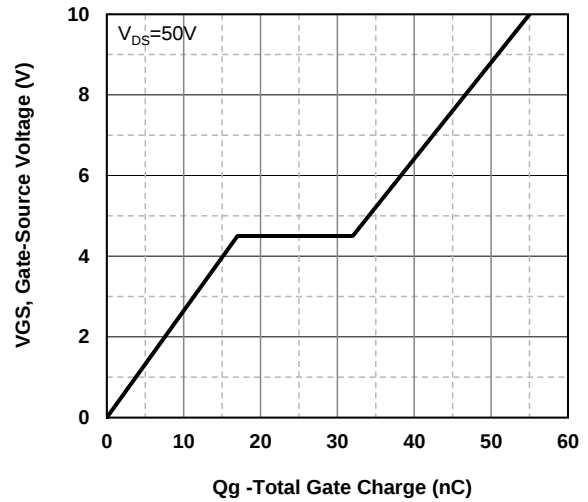


Fig2. Typical Gate Charge Vs. Gate-Source Voltage

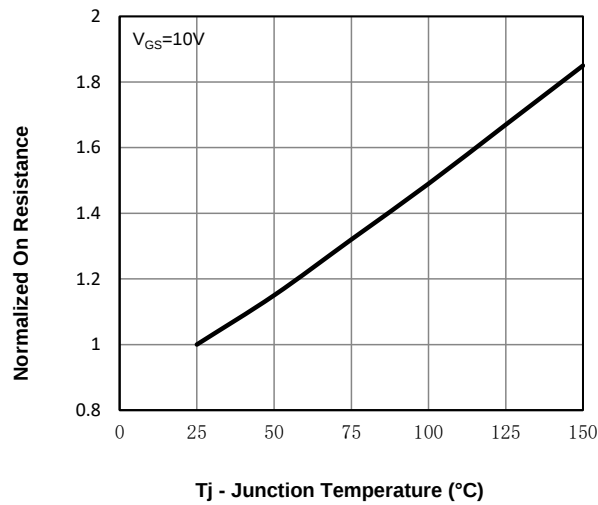


Fig3. Normalized On-Resistance Vs. Temperature

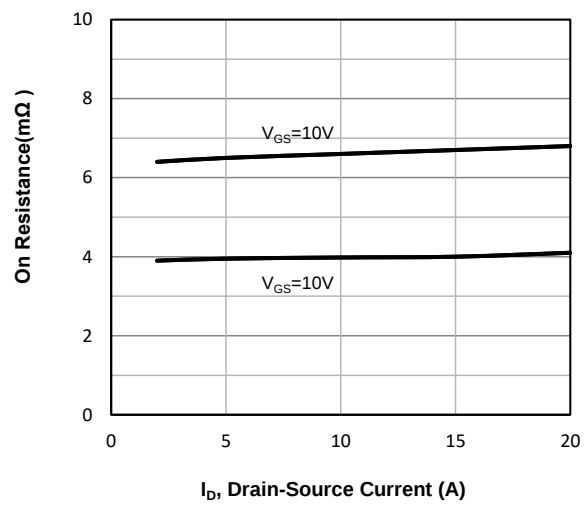


Fig4. On-Resistance Vs. Drain-Source Current

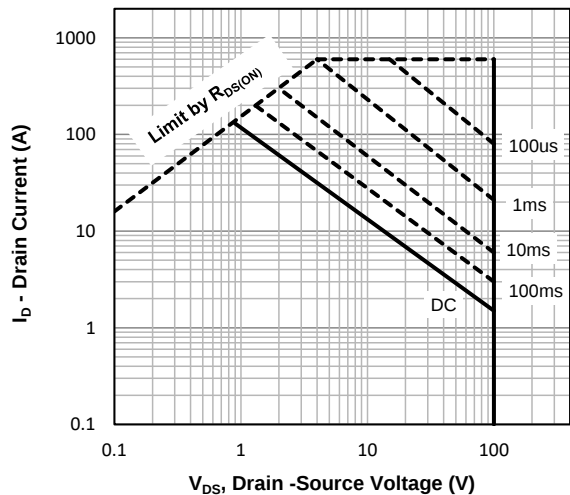


Fig5. Maximum Safe Operating Area

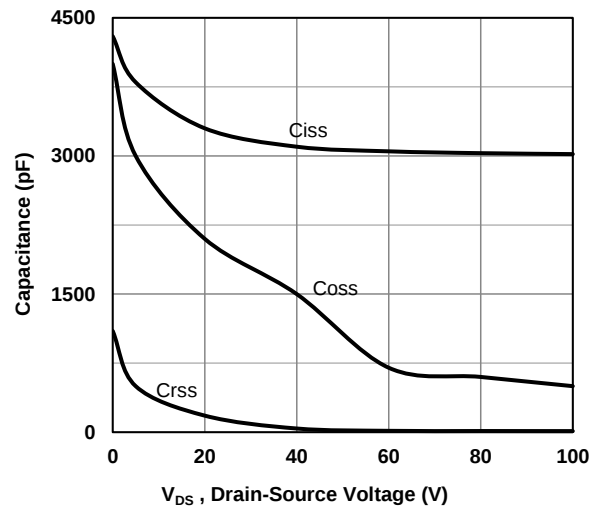
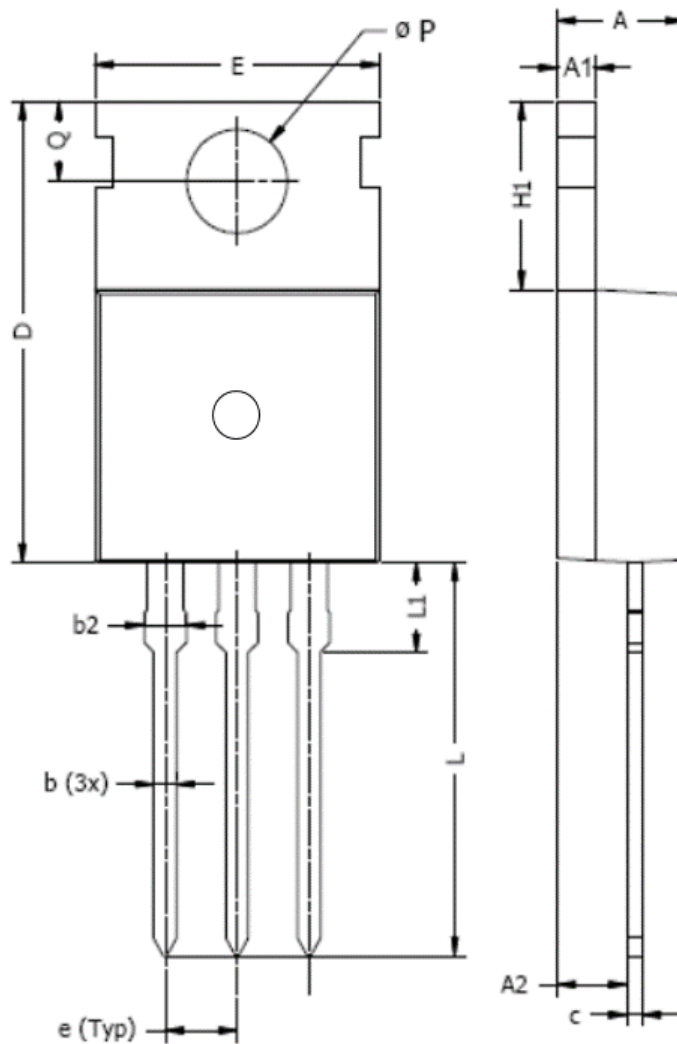


Fig6 Typical Capacitance Vs. Drain-Source Voltage

TO-220 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	3.600	4.800	0.142	0.189
A1	1.200	1.400	0.047	0.055
A2	2.030	2.900	0.080	0.114
b	0.400	1.000	0.016	0.039
b2	1.200	1.780	0.047	0.070
c	0.360	0.600	0.014	0.024
D	14.220	16.500	0.561	0.651
e	2.340	2.740	0.092	0.108
E	9.700	10.600	0.383	0.418
H1	5.840	6.850	0.230	0.270
L	12.700	14.700	0.501	0.580
L1	2.700	3.300	0.106	0.130
$\varnothing P$	3.500	4.000	0.138	0.158
Q	2.540	3.400	0.100	0.134