

Features

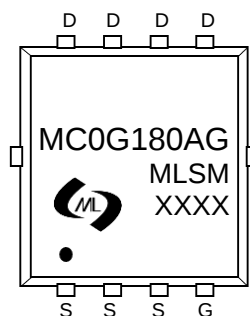
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation
- Advanced SGT technology

Application

- Power switching application

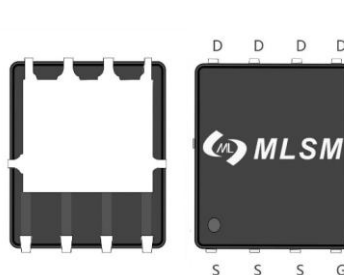
Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
60V	1.8mΩ@10V	180A
	2.6mΩ@4.5V	

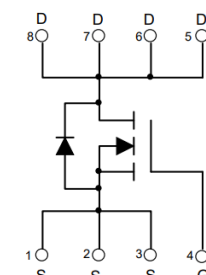


Marking and pin assignment

MC0G180AG: Device code
XXXX : Code



PDFN5X6-8L 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	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	$T_c=25^\circ\text{C}$ 180	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$ 540	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$ 180	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$ 175	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	$T_c=25^\circ\text{C}$ 0.85	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MC0G180AG	PDFN5X6-8L	MC0G180AG	5,000	10,000	70,000	13"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	60	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =60V, V _{GS} =0V	--	--	1	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	--	2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =10V, I _D =30A	--	1.8	2.5	mΩ
		V _{GS} =4.5V, I _D =20A	--	2.6	3.7	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	--	6540	--	pF
C _{OSS}	Output Capacitance		--	900	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	65	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DS} =30V, I _D =30A, V _{GS} =10V	--	105	--	nC
Q _{gs}	Gate Source Charge		--	17.5	--	nC
Q _{gd}	Gate Drain Charge		--	17	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DS} =30V, I _D =30A, V _{GS} =10V, R _G =4.7Ω	--	16	--	nS
t _r	Turn-on Rise Time		--	9	--	nS
t _{d(off)}	Turn-Off Delay Time		--	58	--	nS
t _f	Turn-Off Fall Time		--	12	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=30A	--	0.8	1.2	V

Typical Operating Characteristics

