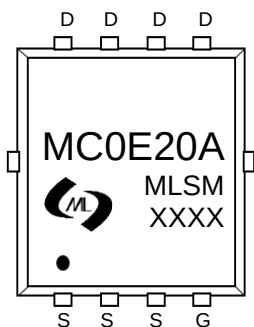


Features

- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Good stability and uniformity with high E_{AS}
- Excellent package for good heat dissipation

Application

- Load switching
- Hard switched and high frequency circuits
- Uninterruptible power supply

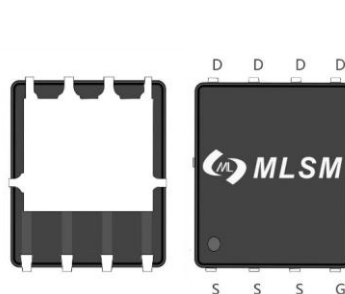


MC0E20A: Device code
XXXX : Code

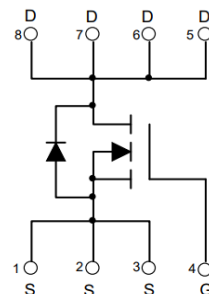
Marking and pin assignment

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
40V	25mΩ@10V	20A
	35mΩ@4.5V	



PDFN5X6-8L view



Schematic diagram



Halogen-Free

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter		Rating	Unit
Common Ratings (TC=25°C Unless Otherwise Noted)				
V _{DS}	Drain-Source Breakdown Voltage		40	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	Tc=25°C	20	A

Mounted on Large Heat Sink

I_{DM}	Pulse Drain Current Tested	$T_c=25^\circ\text{C}$	80	A
I_D	Continuous Drain Current	$T_c=25^\circ\text{C}$	20	A
P_D	Maximum Power Dissipation	$T_c=25^\circ\text{C}$	43	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		75	°C/W

Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MC0E20A	PDFN5X6-8L	MC0E20A	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	40	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =40V, 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 =10A	--	25	30	mΩ
		V _{GS} =4.5V, I _D =5A	--	35	55	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =20V, V _{GS} =0V, f=1MHz	--	530	--	pF
C _{OSS}	Output Capacitance		--	68	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	58	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =20V, I _D =10A, V _{GS} =10V	--	15.5	--	nC
Q _{gs}	Gate Source Charge		--	2.9	--	nC
Q _{gd}	Gate Drain Charge		--	3.5	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =10V, I _D =10A, V _{GS} =4.5V, R _G =3Ω	--	10	--	nS
t _r	Turn-on Rise Time		--	8	--	nS
t _{d(off)}	Turn-Off Delay Time		--	25	--	nS
t _f	Turn-Off Fall Time		--	10	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=10A	--	--	1.2	V

Typical Operating Characteristics

