WM2A075120L

N-Channel SiC Power MOSFET

V_{DS}	=	1200	V
$R_{DS(on)}$	=	75	P
I_D@25	=	33	A

Features

- z High Blocking Voltage with Low On-Resistance
- z High Speed Switching with Low Capacitance
- z Easy to Parallel and Simple to Drive

Package

Electrical Characteristics **(T_C=25 unless otherwise specified)**

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions	Note
$V_{(BR)DSS}$	Drain-Source Breakdown Voltage	1200	/	/	V	V_{GS}=0V, I_D=100μA	
$V_{GS(th)}$	Gate Threshold Voltage	1.9	2.6	4.0	V	V_{DS}=V_{GS}, I_D=5mA	
		/	1.8	/		V_{DS}=V_{GS}, I_D=5mA, T_J=175	
I_{DSS}	Zero Gate Voltage Drain Current	/	1	100	μA	V_{DS}=1200V, V_{GS}=0V	
I_{GSS+}	Gate-Source Leakage Current	/	10	250	nA	V_{DS}=0V, V_{GS}=22V	
I_{GSS-}	Gate-Source Leakage Current	/	10	250	nA	V_{DS}=0V, V_{GS}=-8V	
$R_{DS(on)}$	Drain-Source On-State Resistance	/	75	95	mΩ	V_{GS}=18V, I_D=20A	
		/	120	/		V_{GS}=18V, I_D=20A, T_J=175	
g_{fs}	Transconductance	/	10.4	/	S	V_{DS}=20V, I_D=20A	
		/	9.2	/		V_{DS}=20V, I_D=20A, T_J=175	
C_{iss}	Input Capacitance	/pF	1200	/pF-1c[redacted]-c)1(-	pF	V_{DS}=1000V f=1MHz V_{AC}=25mV	CTc 0 Tw

Typical Performance

Figure 1. Output Characteristics T_J = -55

Figure 2. Output Characteristics T_J = 25

Figure 3. Output Characteristics T_J = 175

Figure 4. Normalized On-Resistance vs. Temperature

Figure 5. On-Resistance vs. Drain Current For Various Temperatures

Figure 6. On-Resistance vs. Temperature For Various Gate Voltage

Typical Performance

Figure 7. Transfer Characteristic for Various Junction Temperatures

Figure 8. Body Diode Characteristic at 25

Figure 9. Body Diode Characteristic at 100

Figure 10. Body Diode Characteristic at 175

Figure 11. Threshold Voltage vs. Temperature

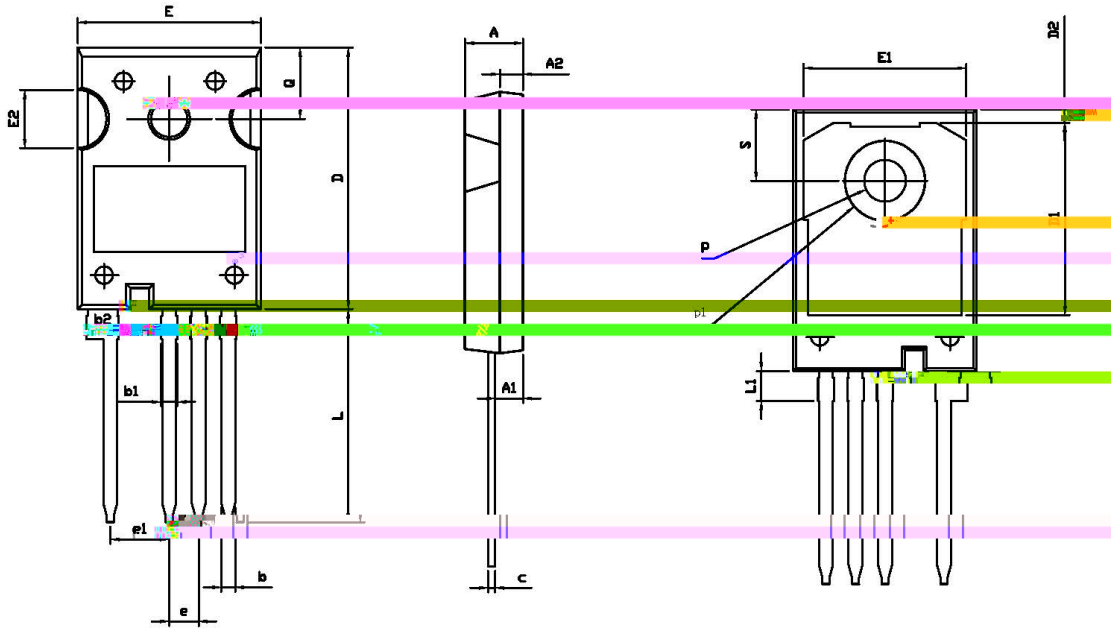
Figure 12. Gate Charge Characteristics

Typical Performance

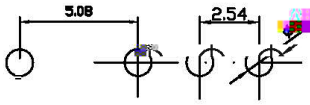
Figure 13. 3rd Quadrant Characteristic at 25

Figure 14. 3rd Quadrant Characteristic at 0 75 25

Package Dimensions



RECOMMENDED LAND PATTERN



UNIT: mm

	MIN	NOM	MAX
A	4.80	5.60	5.40
A1	2.25	2.40	2.45
A2	1.85	2.00	2.15
b	1.05	1.20	1.35
b1	1.00	1.30	1.60
b2	2.35	2.65	2.95
c	0.50	0.60	0.70
D	22.34	22.54	22.74
D1	16.00	16.50	17.00
D2	0.97	1.17	1.37
e	2.34	2.54	2.74
e1	4.88	5.08	5.28
E	15.60	15.80	16.00
E1	13.50	14.00	14.50
E2	4.80	5.00	5.20
L	18.08	18.38	18.68
L1	2.38	2.58	2.78
	2.50	2.60	2.70
p1	7.00	7.20	7.40
Q	6.00	6.15	6.30
S	6.00	6.15	6.30

Notes

1) Before using our products, please contact our marketing managers and get the latest specifications.

2) Ongoing efforts are being made to improve the reliability and quality of the products by CETC, but the semiconductors can malfunction due to various factors. Therefore, in order to prevent artificial damage or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. CETC doesn't have responsibility for any damages arising from the use of our products beyond the rating specified by CETC.

3) All the information contained in this document, such as the examples of application circuits, circuit constants, is provided only to illustrate the standard usage and operations of the products. The other relevant conditions must be taken into consideration when designing circuits for mass production.

4) The information specified in this document is intended only to show the typical functions and examples of application circuits for the products. CETC does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by CETC or any other parties. CETC shall have no responsibility whatsoever for any dispute arising from the use of such technical information.

5) The products specified in this document are not designed to be radiation tolerant.

6) For use of our products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a CETC representative: transportation equipment (cars, ships, trains, etc.), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, and power transmission systems.

7) Do not use our products in applications requiring extremely high reliability, such as aerospace equipment, nuclear power control systems and submarine repeaters.

8) CETC shall not be responsible for any damages or injury caused by non-compliance with the recommended usage conditions and specifications contained in this document.

9) CETC has used reasonable care to ensure the accuracy of the information contained in this document. However, CETC does not guarantee the information contained in this document is totally correct, and CETC doesn't have responsibility for any damages arising from any inaccuracy or misprint of such information.

10) Please use the products in accordance with any applicable environmental laws and regulations, such as the RoHS Directive. For more details, including RoHS compatibility, please contact a CETC marketing manager. CETC doesn't have responsibility for any damages or losses arising from disobedience to any relevant laws or regulations.

11) When providing our products and technologies contained in this document to other countries or regions, you must comply w the prncedu* [(r)-12(e)24(s)23(and)7(n p)27(r)-12(ov)23(i)-18(s)23(i)-18(ons-14(s7(uc)-3(t)23(i)pu)8( )27(l)-)27(t)-14(e(and