S1M040120L

TriQSiC™ 1200V Silicon Carbide Power MOSFET G1

Features

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-
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Benefits

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Applications

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Table 1 Key performance and package parameters

Type	V_{DS}	I_{DS}	$R_{DS(on),\ typ}$	$T_{J,max}$	Marking	Package

S1M040120L

1200V SiC Power MOSFET

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1 Maximum ratings

Table 2 Maximum rating

Symbol	Parameter	Value	Unit	Test Conditions	Note

3 Electrical characteristics

3.1 Static characteristics

Table 4 Static characteristics

Symbol	Parameter	Min.	Typ.	Max.	Unit	Test Conditions	Note

S1M[illegible]0L

MOS

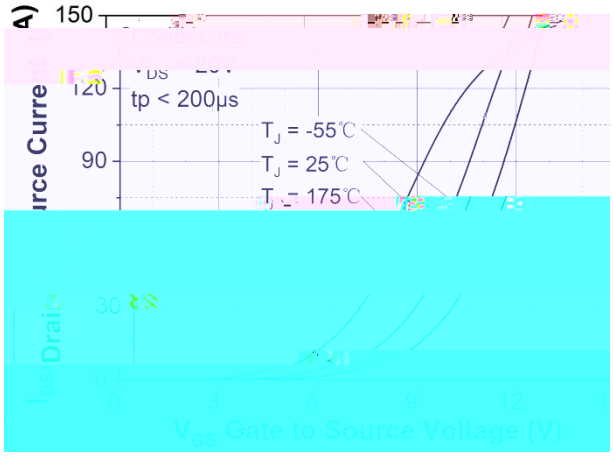
[illegible]ng characteristics

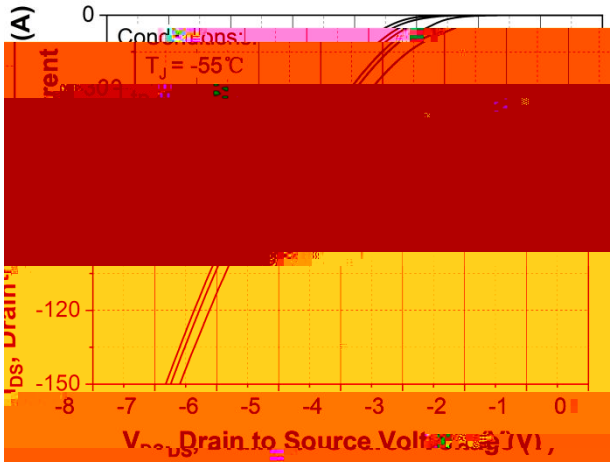
Table 6 Dynamic characteristics

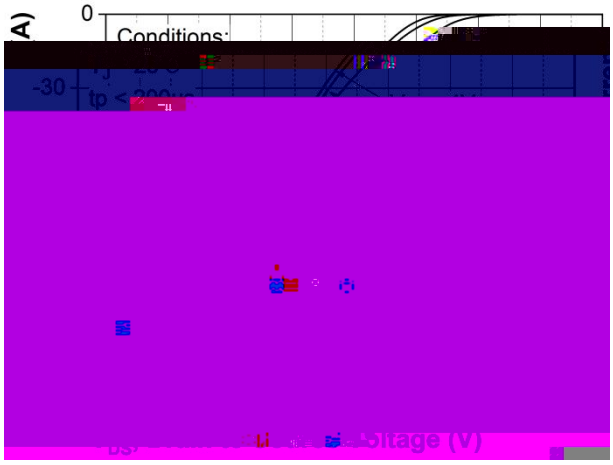
Symbol	Parameter	Min.		Max.	Unit	Test Conditions	Note

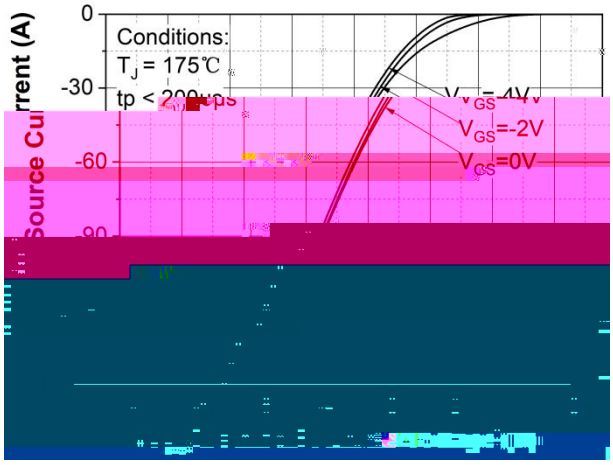
4 Ele

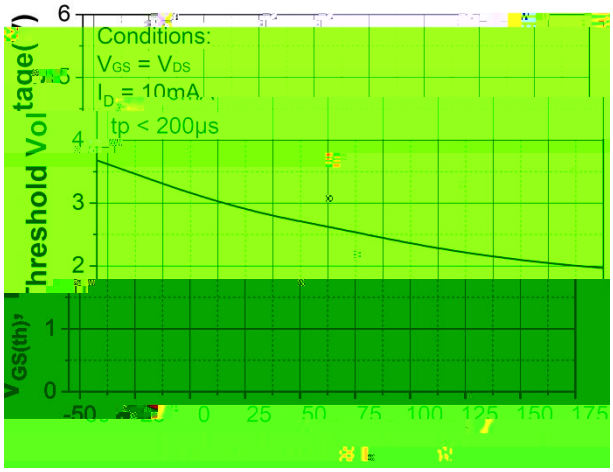
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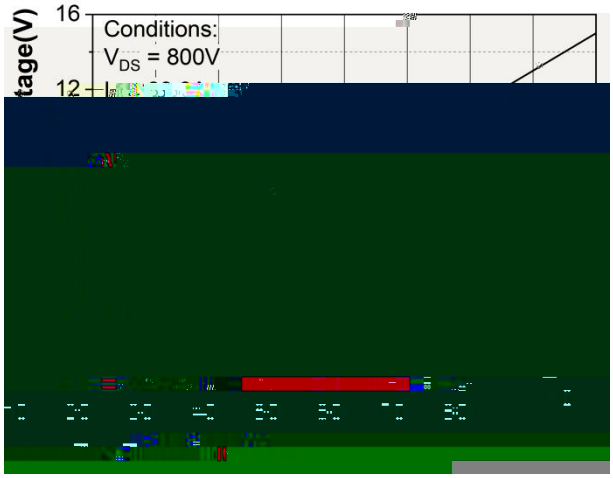

tp < 200μs
T_J = -55℃
T_J = 25℃
T_J = 175℃


Conditions:
T_J = -55℃

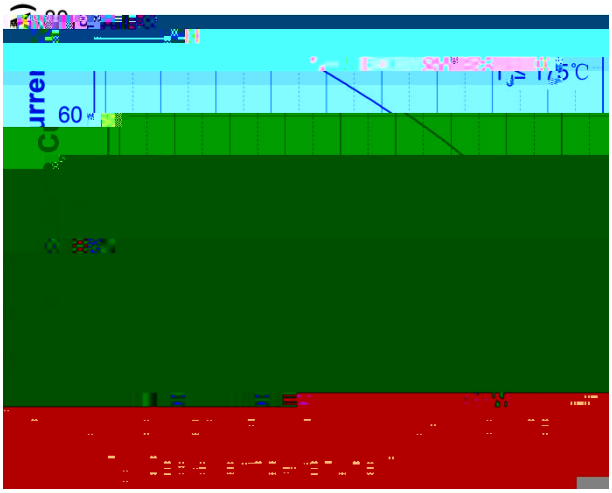

Conditions:

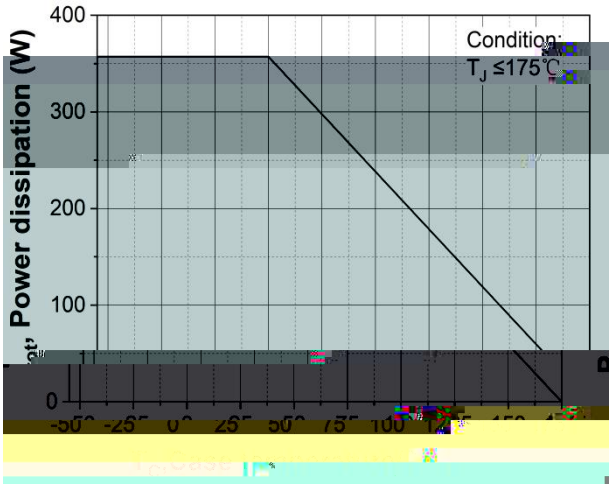

Conditions:
T_J = 175℃
V_{GS}=-2V
V_{GS}=0V

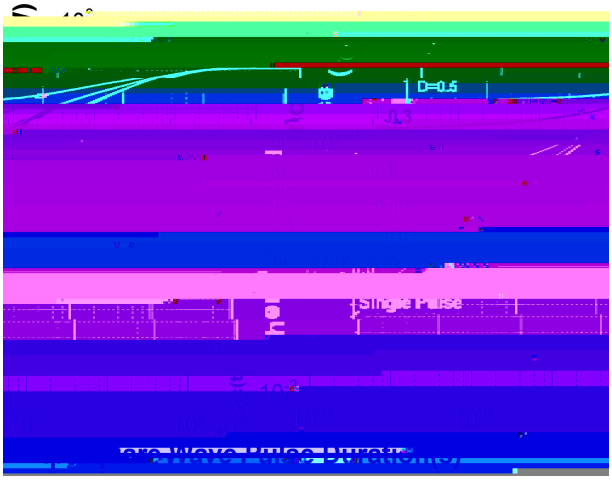

Conditions:
V_{GS} = V_{DS}
I_D = 10mA
tp < 200μs

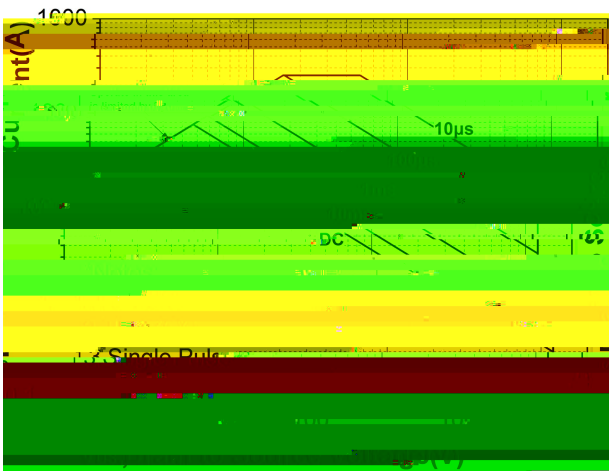

Conditions:
V_{DS} = 800V

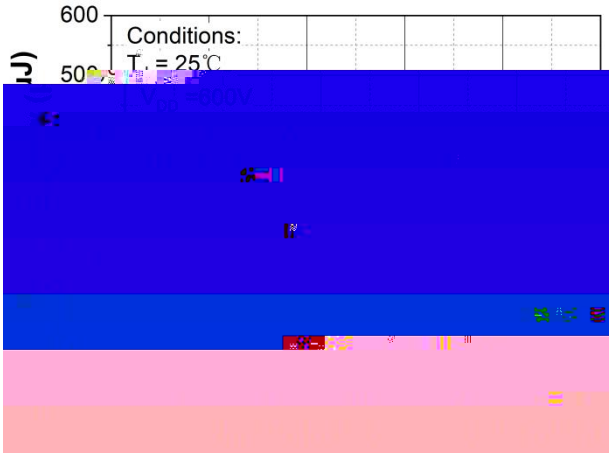
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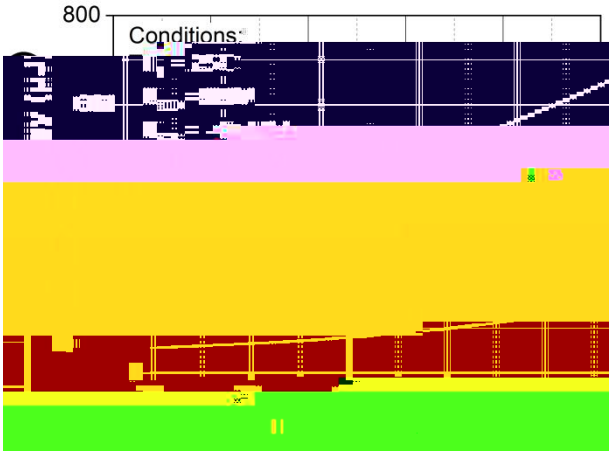



Power dissipation (W)
400
300
200
100
0
Condition:
$T_J \leq 175℃$

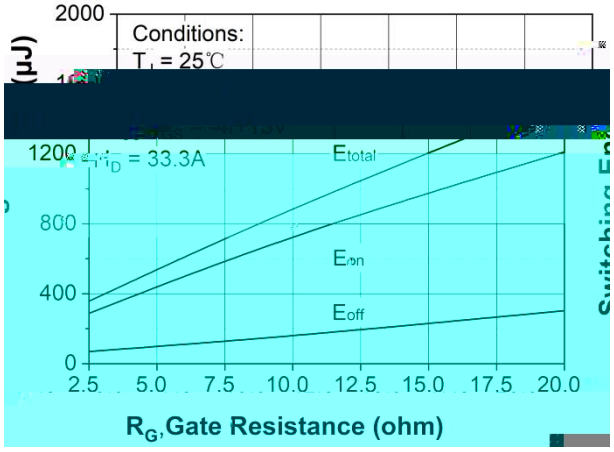

D=0.5
Single Pulse

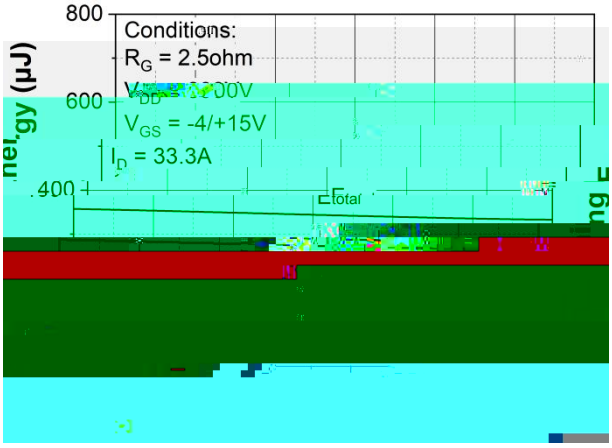

10μs
DC

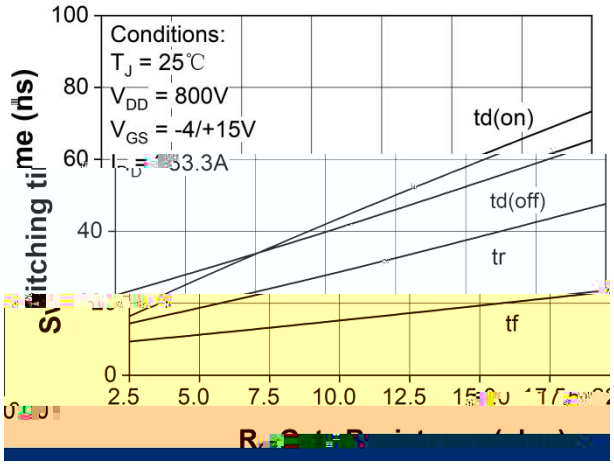

600
Conditions:
T_J = 25℃


800
Conditions:

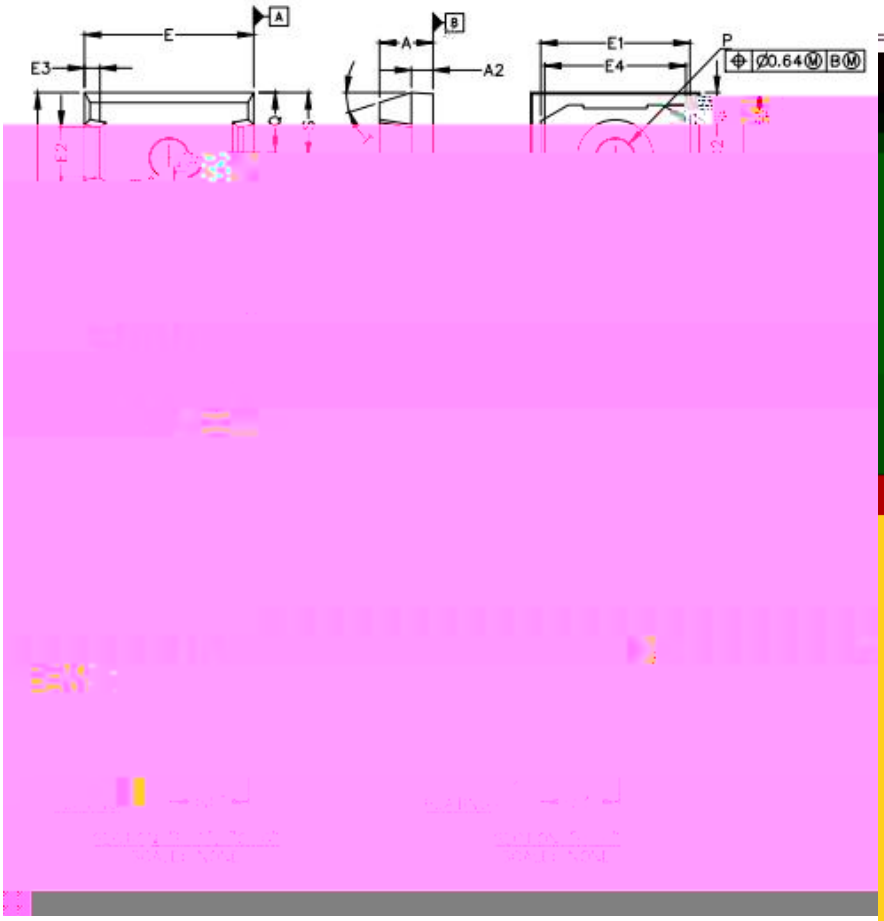
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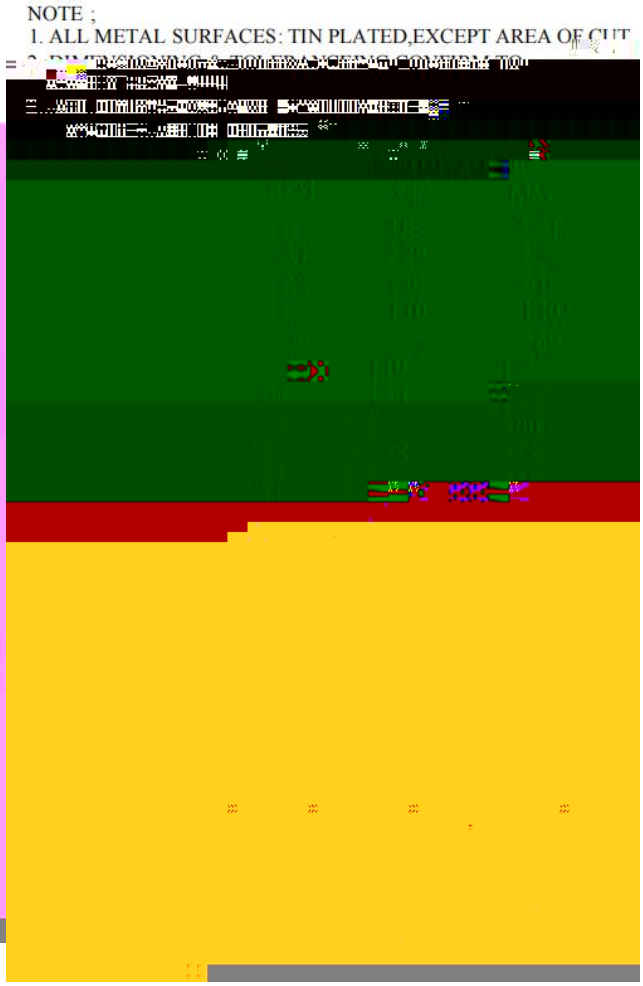

Conditions:
T_J = 25℃
I_D = 33.3A
E_total
E_on
E_off
2000
1200
800
400
0
2.5
5.0
7.5
10.0
12.5
15.0
17.5
20.0
R_G,Gate Resistance (ohm)


Conditions:
R_G = 2.5ohm
V_GS = -4/+15V
I_D = 33.3A
E_total
800
600
400

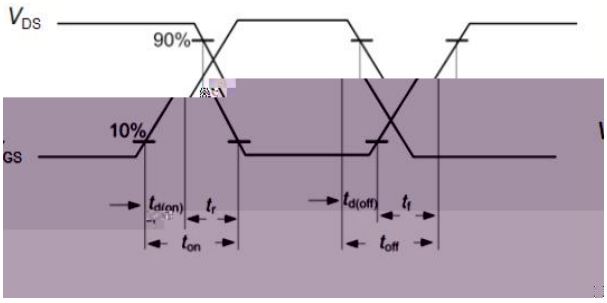

Conditions:
T_J = 25℃
V_DD = 800V
V_GS = -4/+15V
td(on)
td(off)
tr
tf
100
80
60
40
0
2.5
5.0
7.5
10.0
12.5

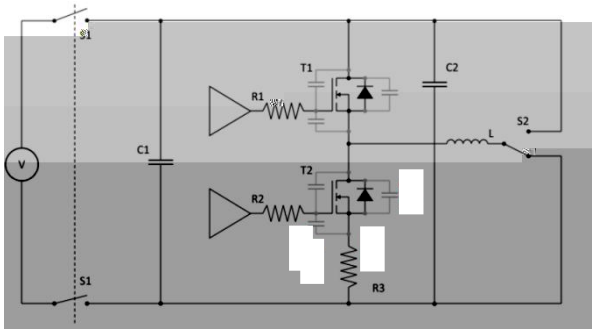
5 Package drawing

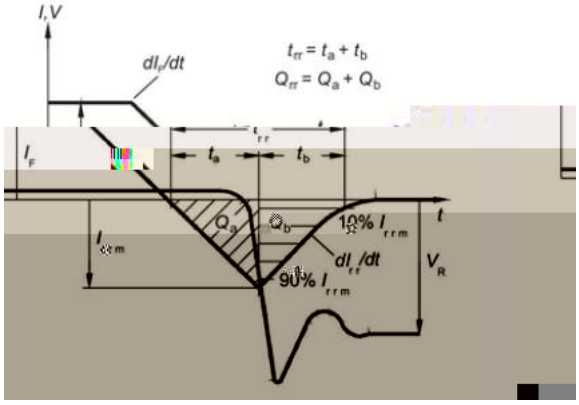




6 Test conditions







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Revision history

Document version	Date of release	Document stage	Description of changes
V01_00	2024-11-13	——	——
V02_00	2025-04-09	——	——
V02_01	2025-11-12	——	——
V02_02	2025-01-06	Final	——

Attention

RoHS compliance

REACH compliance

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