

GCMX040B120S1-E1

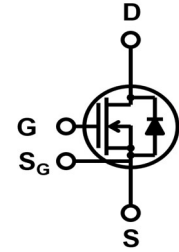


1200V SiC MOSFET Power Module

V_{DS}	1200 V
$R_{DS,on}$	37 mΩ
I_D (TC=25°C)	57 A
$T_{j,max}$	175°C

Features

Package



- (1) S_G (Driver Source)
- (2) G (Gate)
- (3) D (Drain)
- (4) S (Source)

Benefits

Applications

Part #	Package	Marking
GCMX040B120S1-E1	SOT-227	GCMX040B120S1-E1



Absolute Maximum Ratings

Characteristics	Symbol	Conditions	Values	Unit

1200V SiC MOSFET Power Module

GCMX040B120S1-E1

Static Electrical Characteristics

Characteristics	Symbol	Conditions	Values			Unit
		o				

AC Electrical Characteristics

Characteristics	Symbol	Conditions	Values			Unit

Q

Body Diode Characteristics

Characteristics	Symbol	Conditions	Values			Unit



$V_{gs} = 20V$

$V_{gs} = 18V$

$V_{gs} = 16V$

$V_{gs} = 14V$

$V_{gs} = 12V$

$V_{gs} = 10V$

$75^{\circ}C$

10^6

10^5

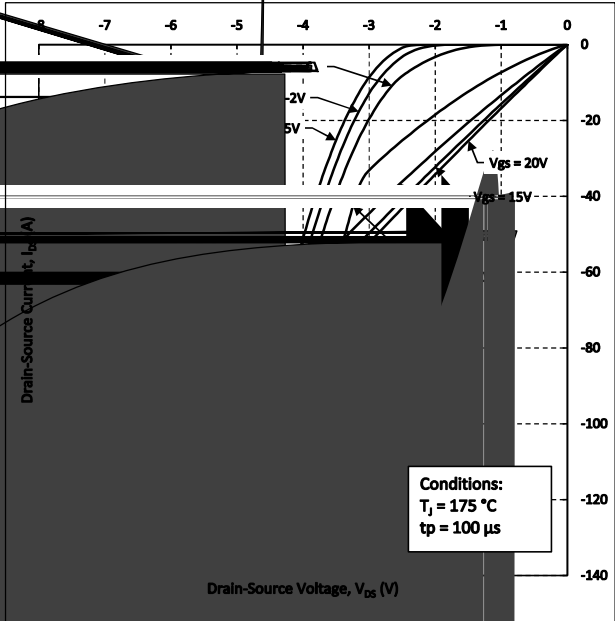
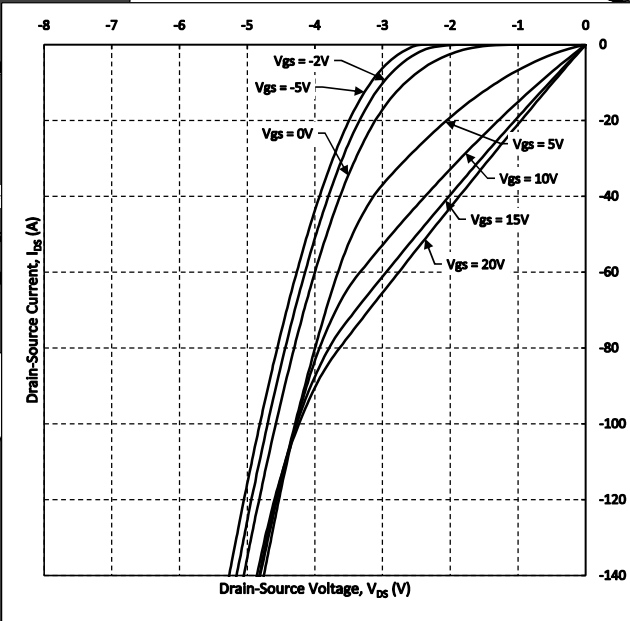
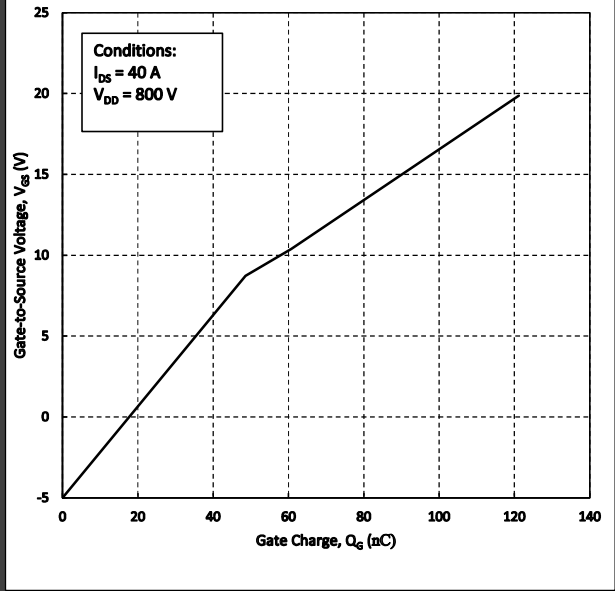
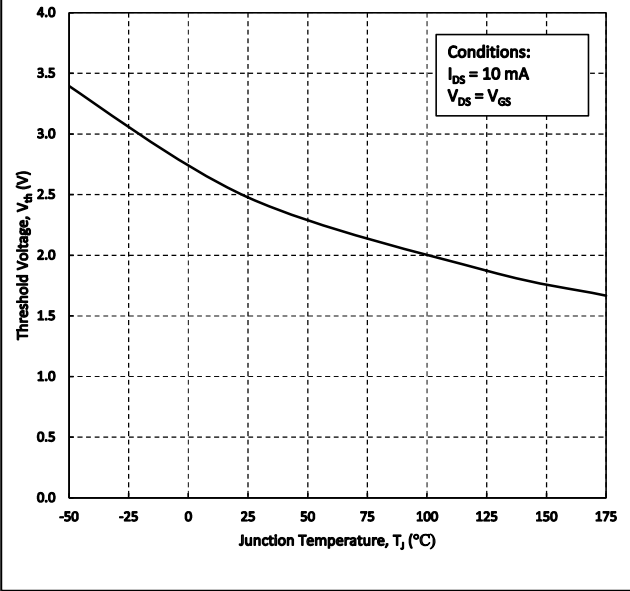
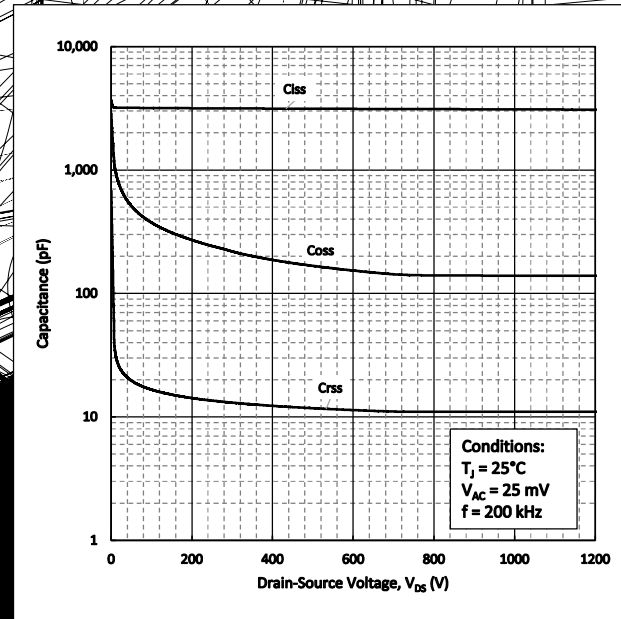
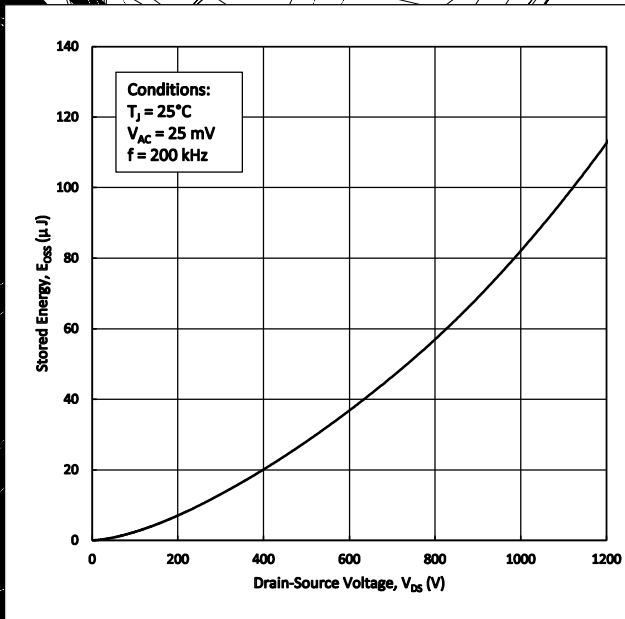


Figure 11. Body Diode Characteristic
 $T_J = 125^\circ\text{C}$



1200V SiC MOSFET Power Module

GCMX040B120S1-E1



Conditions:
 $T_J < 175^\circ\text{C}$

150 175
vs. Case

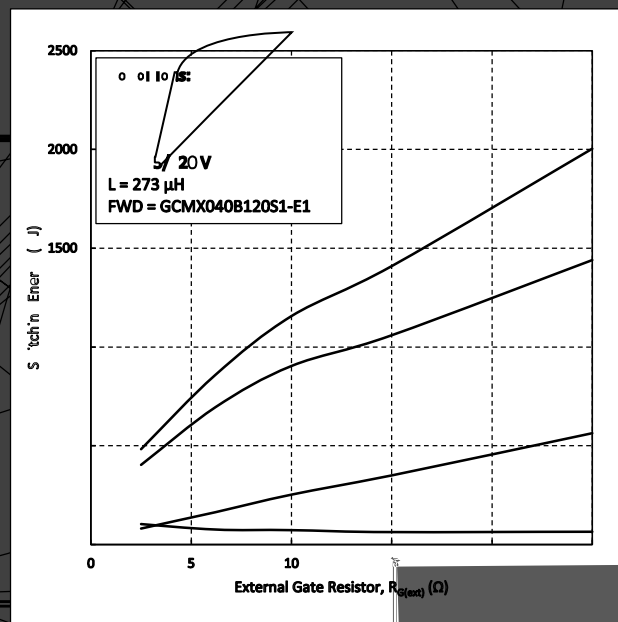
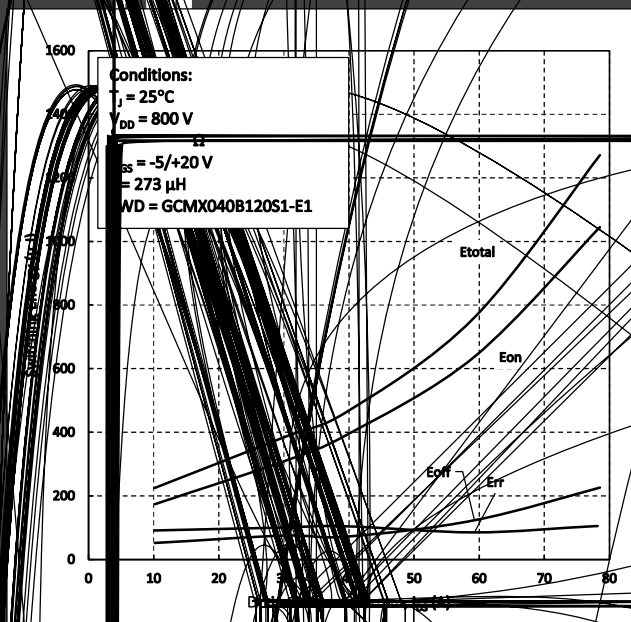
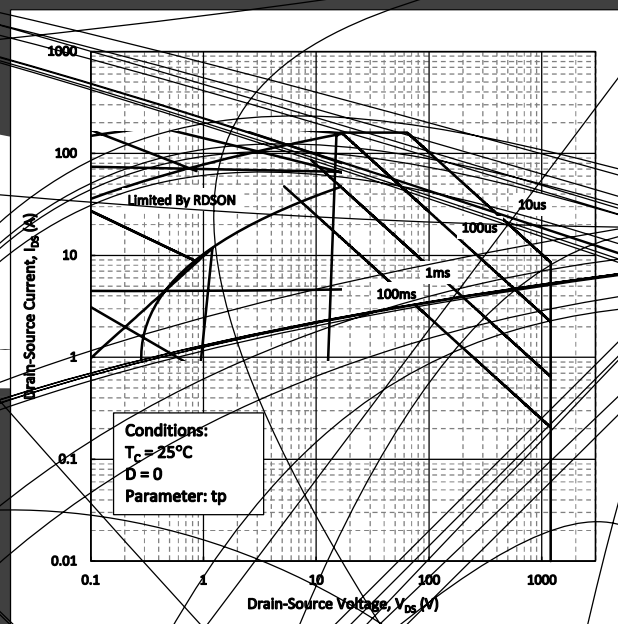


Figure 1. Comparison of the effect of the different parameters on the response of the model.

Conditions:
 $V_{DD} = 800\text{ V}$
 $I_{DS} = 40\text{ A}$
 $R_{G(ext)} = 2.5\ \Omega$
 $V_{GS} = -5/+20\text{ V}$
 $L = 273\ \mu\text{H}$
 FWD = GCMX040B120S1-E1

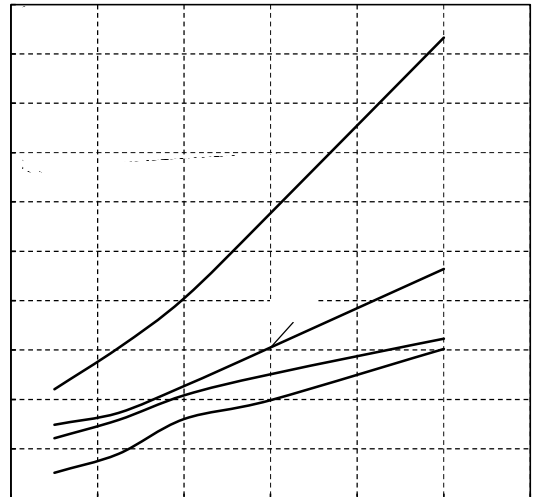


Figure 23. Clamp energy vs. I_{DS}

Figure 24. Switching Times vs $R_{G(ext)}$

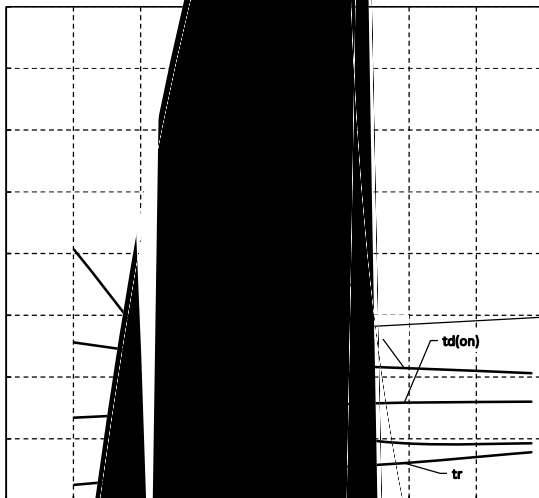


Figure 24. dv/dt and di/dt vs. Drain Current

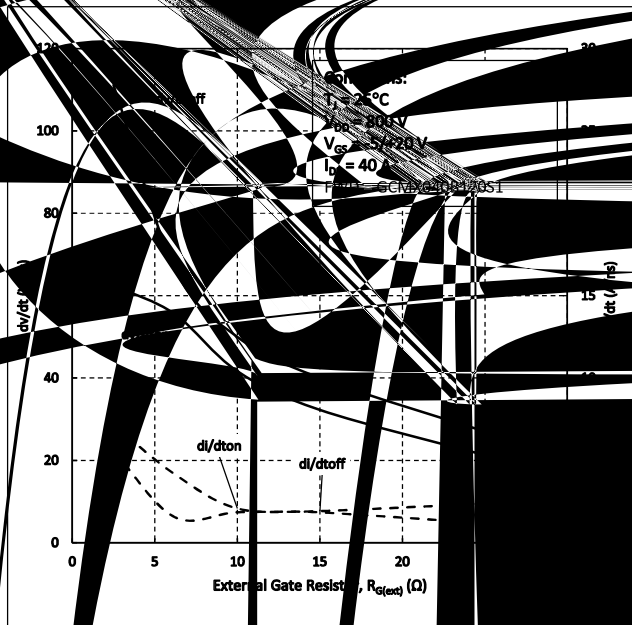


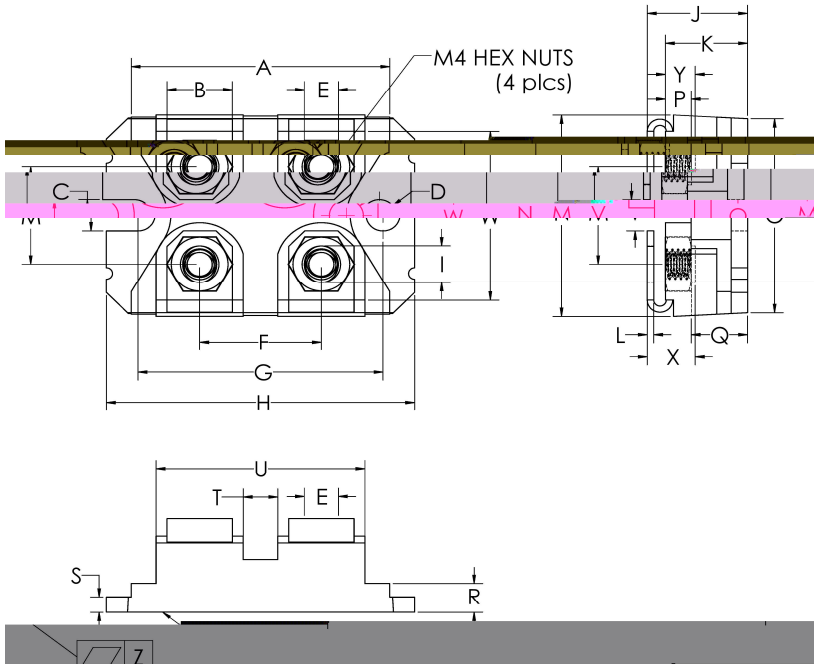
Figure 25. dv/dt and di/dt vs. $R_{g(ext)}$

Figure 27. Turn-on Transient Condition

1200V SiC MOSFET Power Module

GCMX040B120S1-E1

Package Dimensions SOT-227

[illegible]

1200V SiC MOSFET Power Module

GCMX040B120S1-E1

Revision History		

RoHS Compliance

Q

REACH Compliance

Q Q
Q

Q
Q

Q

Q Q Q
Q Q Q
Q Q Q
Q Q Q