

Absolute Maximum Ratings $T_C=25^\circ\text{C}$ unless otherwise noted**MOSFET**

Symbol	Description	Value	Unit
V_{DSS}	Drain-Source Voltage	1200	V
V_{GSS}	Gate-Source Voltage	-4/+22	V
I_D	Drain Current @ $T_C=25^\circ\text{C}$ @ $T_C=100^\circ\text{C}$	100	A
		50	A
I_{DM}	Pulsed Drain Current	274	A
P_D	Maximum Power Dissipation @ $T_j=175^\circ\text{C}$	416	W

Body Diode

Symbol	Description	Value	Unit
I_S	Source Current	50	A
I_{SM}	Pulsed Source Current	274	A

Module

Symbol	Description	Value	Unit
T_{jmax}	Maximum Junction Temperature	175	$^\circ\text{C}$
T_{jop}	Operating Junction Temperature	-40 to +150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-40 to +150	$^\circ\text{C}$
V_{ISO}	Isolation Voltage RMS, $f=50\text{Hz}$, $t=1\text{min}$	4000	V

MOSFET Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$R_{DS(on)}$	Static Drain-Source On-Resistance	$I_D=40\text{A}, V_{GS}=18\text{V}, T_j=25^\circ\text{C}$		20.0	25.0	$\text{m}\Omega$
		$I_D=40\text{A}, V_{GS}=20\text{V}, T_j=125^\circ\text{C}$		30.0		
$V_{GS(th)}$	Gate-Source Threshold Voltage	$I_D=20.0\text{mA}, V_{DS}=10\text{V}, T_j=25^\circ\text{C}$	2.7		5.6	V
g_{fs}	Forward Transconductance	$V_{DS}=10\text{V}, I_D=40\text{A}, T_j=25^\circ\text{C}$		16.6		S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=V_{DSS}, V_{GS}=0\text{V}, T_j=25^\circ\text{C}$			20	μA
I_{GSS}	Gate-Source Leakage Current	$V_{GS}=V_{GSS}, V_{DS}=0\text{V}, T_j=25^\circ\text{C}$			200	μA
R_{Gint}	Internal Gate Resistance			3.5		Ω
C_{iss}	Input Capacitance	$V_{GS}=0\text{V}, V_{DS}=800\text{V}, f=1.0\text{MHz}$		2674		pF
C_{oss}	Output Capacitance			152		pF
C_{rss}	Reverse Transfer Capacitance			54		pF
Q_g	Total Gate Charge	$I_D=40\text{A}, V_{DS}=600\text{V}, V_{GS}=18\text{V}$		214		nC
Q_{gs}	Gate-Source Charge			44		nC
Q_{gd}	Gate-Drain ("Miller") Charge			82		nC
$t_{d(on)}$	Turn-On Delay Time	$V_{DS}=400\text{V}, I_D=36\text{A}, R_G=0\Omega, V_{GS}=0/18\text{V}, T_j=25^\circ\text{C}$		21		ns
t_r	Rise Time			39		ns
$t_{d(off)}$	Turn-Off Delay Time			49		ns
t_f	Fall Time			24		ns
E_{on}	Turn-On Switching Loss	$V_{DS}=600\text{V}, I_D=40\text{A}, R_G=0\Omega, V_{GS}=0/18\text{V}$		0.56		mJ
E_{off}	Turn-Off Switching Loss			0.24		mJ

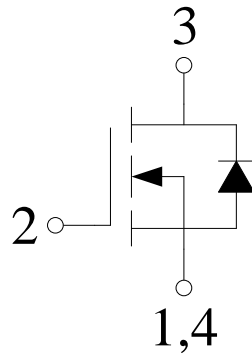
Body Diode Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
V_{SD}	Diode Forward Voltage	$I_S=40\text{A}, V_{GS}=0\text{V}, T_j=25^\circ\text{C}$		3.20	3.65	V	
t_{rr}	Diode Reverse Recovery Time	$V_R=600\text{V}, I_S=40\text{A}, di/dt=2200\text{A}/\mu\text{s}, V_{GS}=0\text{V}, T_j=25^\circ\text{C}$		25		ns	
Q_r	Diode Reverse Recovery Charge				230		nC
I_{RM}	Peak Reverse Recovery Current				18.0		A

Module Characteristics $T_C=25^{\circ}\text{C}$ unless otherwise noted

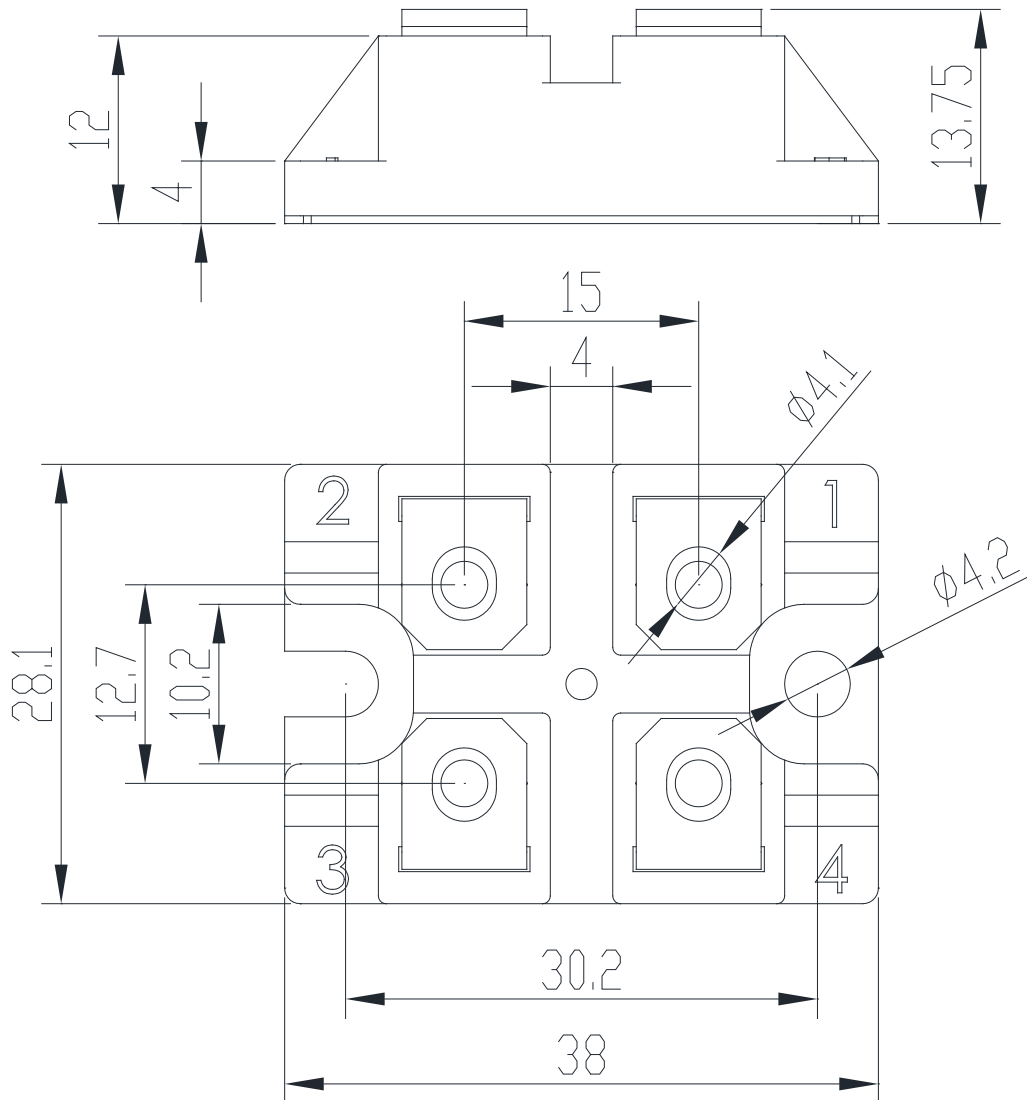
Symbol	Parameter	Min.	Typ.	Max.	Unit
R_{thJC}	Junction-to-Case (per MOSFET)			0.360	K/W
R_{thCH}	Case-to-Heatsink (per Module)		0.15		K/W
M	Terminal Connection Torque, Screw M4	1.1		1.5	N.m
	Mounting Torque, Screw M4	1.1		1.5	
G	Weight of Module		35		g

Circuit Schematic



Package Dimensions

Dimensions in Millimeters



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