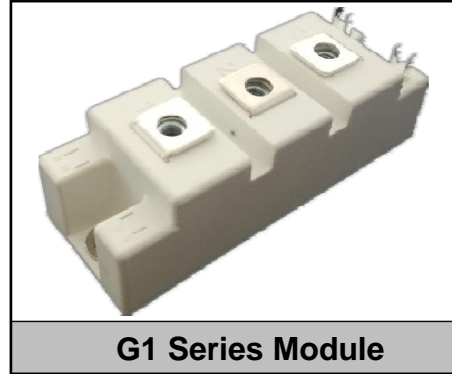


FEATURES

- High short circuit capability, self limiting short circuit current
- IGBT CHIP(Trench+ Field Stop technology)
- $V_{CE(sat)}$ with positive temperature coefficient
- Fast switching, Low switching losses
- Free wheeling diodes with fast and soft reverse recovery



APPLICATIONS

- High frequency switching application
- Welding converters
- Motion/servo control
- UPS systems

ABSOLUTE MAXIMUM RATINGS

T_c=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Values	Unit
IGBT				
V_{CES}	Collector - Emitter Voltage	$T_{vj}=25^{\circ}C$	1250	V
V_{GES}	Gate - Emitter Voltage		± 30	V
I_c	DC Collector Current	$T_c=25^{\circ}C$	150	A
		$T_c=80^{\circ}C$	100	A
I_{cM}	Repetitive Peak Collector Current	$t_p=1ms$	200	A
P_{tot}	Power Dissipation Per IGBT		694	W
Diode				
V_{RRM}	Repetitive Reverse Voltage	$T_{vj}=25^{\circ}C$	1250	V
$I_{F(AV)}$	Average Forward Current	$T_c=25^{\circ}C$	150	A
		$T_c=80^{\circ}C$	100	A
I_{FRM}	Repetitive Peak Forward Current	$t_p=1ms$	200	A

ELECTRICAL AND THERMAL CHARACTERISTICS TC=25°C unless otherwise specified

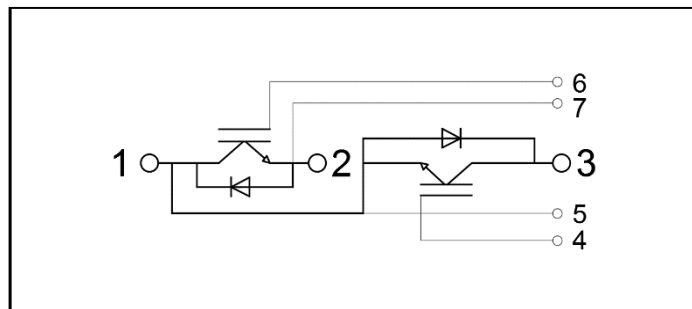
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
IGBT						
$V_{GE(th)}$	Gate - Emitter Threshold Voltage	$V_{CE}=V_{GE}, I_c=2.0mA$	5.0	5.8	6.6	V
$V_{CE(sat)}$	Collector - Emitter Saturation Voltage	$I_c=100A, V_{GE}=15V, T_{vj}=25^\circ C$		2.2	2.55	V
		$I_c=100A, V_{GE}=15V, T_{vj}=125^\circ C$		2.5		V
I_{CES}	Collector Leakage Current	$V_{CE}=1250V, V_{GE}=0V, T_{vj}=25^\circ C$			1	mA
		$V_{CE}=1250V, V_{GE}=0V, T_{vj}=125^\circ C$			5	mA
I_{GES}	Gate Leakage Current	$V_{CE}=0V, V_{GE}\pm 15V, T_{vj}=125^\circ C$	-500		500	nA
C_{ies}	Input Capacitance	$V_{CE}=25V, V_{GE}=0V, f=1MHz$		6.67		nF
C_{res}	Reverse Transfer Capacitance			0.16		nF
$t_{d(on)}$	Turn - on Delay Time	$V_{cc}=600V, I_c=100A, R_G=5.6\Omega,$	$T_{vj}=25^\circ C$	171		ns
			$T_{vj}=125^\circ C$	180		ns
t_r	Rise Time	$V_{GE}=\pm 15V,$ Inductive Load	$T_{vj}=25^\circ C$	90		ns
			$T_{vj}=125^\circ C$	100		ns
$t_{d(off)}$	Turn - off Delay Time	$V_{cc}=600V, I_c=100A, R_G=5.6\Omega,$	$T_{vj}=25^\circ C$	380		ns
			$T_{vj}=125^\circ C$	405		ns
t_f	Fall Time	$V_{GE}=\pm 15V,$ Inductive Load	$T_{vj}=25^\circ C$	85		ns
			$T_{vj}=125^\circ C$	90		ns
E_{on}	Turn - on Energy	$V_{cc}=600V, I_c=100A, R_G=5.6\Omega,$	$T_{vj}=25^\circ C$	9.8		mJ
			$T_{vj}=125^\circ C$	6.2		mJ
E_{off}	Turn - off Energy	$V_{GE}=\pm 15V,$ Inductive Load	$T_{vj}=25^\circ C$	5.7		mJ
			$T_{vj}=125^\circ C$	7.4		mJ
I_{sc}	Short Circuit Current	$t_{psc}\leq 10\mu s, V_{GE}=15V$ $T_{vj}=125^\circ C, V_{cc}=720V$		470		A
R_{thJC}	Junction-to-Case Thermal Resistance (Per IGBT)				0.20	K/W
Diode						
V_F	Forward Voltage		$I_F=100A, V_{GE}=0V, T_{vj}=25^\circ C$	2	2.3	V
			$I_F=100A, V_{GE}=0V, T_{vj}=125^\circ C$	2.2		V
Q_{rr}	Reverse Recovery Charge	$I_F=100A, V_R=600V$		16		uC
I_{RRM}	Max. Reverse Recovery Current	$di/dt=-2500A/\mu s$		120		A
E_{rec}	Reverse Recovery Energy	$T_{vj}=125^\circ C$		6		mJ
R_{thJD}	Junction-to-Case Thermal Resistance (Per Diode)				0.3	K/W

MODULE CHARACTERISTICS

T_c=25°C unless otherwise specified

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
T _{Vj max}	Max. Junction Temperature				150	°C
T _{Vj op}	Operating Temperature		-40		150	°C
T _{stg}	Storage Temperature		-40		125	°C
V _{isol}	Insulation Test Voltage	AC, t=1min	3000			V
Torque	To-Sink	Recommended (M6)	3		5	N·m
Torque	To-Terminal	Recommended (M5)	2.5		5	N·m
Weight				176		g

CIRCUIT DIAGRAM



PACKAGE OUTLINE

