



## IGBT Modules

$V_{CES}$  120V  
 $I_C$  50A

## Applications

Motor Drivers  
AC and DC servo drive amplifier  
UPS (Uninterruptible Power Supplies)

## Features

Low switching losses  
Low  $V_{CE(sat)}$  with positive temperature coefficient  
Including fast & soft recovery parallel FWD  
Low inductance case  
High short circuit capability



# MG50P12MLE1A

COMPLIANT  
RoHS

IGBT- inverter

Characteristic Values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Gate-Emitter Threshold Voltage	$V_{GE(th)}$	$V_{GE}=V_{CE}$ , $I_C=1.7mA$ , $T_V=25$	5.2	5.8		



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## Diode-inverter

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	$T_V=25$	1200	V
Continuous DC Forward Current	$I_F$		50	A
Repetitive Peak Forward Current	$I_{FRM}$	$t_p=1ms$	100	A

### Characteristic Values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	$V_F$	$I_F=50A, T_V=25$		1.95	2.80	V
		$I_F=50A, T_V=125$		1.85		
		$I_F=50A, T_V=150$		1.80		



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IGBT-brake-chopper

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Collector-Emitter Voltage	$V_{CES}$	$V_{GE}=0V, I_C=1mA, T_V=25$	1200	



# MG50P12MLE1A COMPLIANT RoHS

TurnonDelayTime	$t_{d(on)}$	$I_C=25A$ $V_{CE}=600V$ $V_{GE}=\pm 15V$ $R_G=20$ $T_V=150$		18		ns
RiseTime	$t_r$			27		ns
TurnoffDelayTime	$t_{d(off)}$			89		ns
FallTime	$t_f$			262		ns
EnergyDissipationDuring TurnonTime	$E_{on}$			2.92		mJ
EnergyDissipationDuring TurnoffTime	$E_{off}$			1.43		mJ
SC Data	$I_{sc}$	$t_p=8\mu s, V_{GE}=15V, T_V=150$ , $V_{CE}=600V, V_{EM} 1200V$		100		A



## Diode-Rectifier

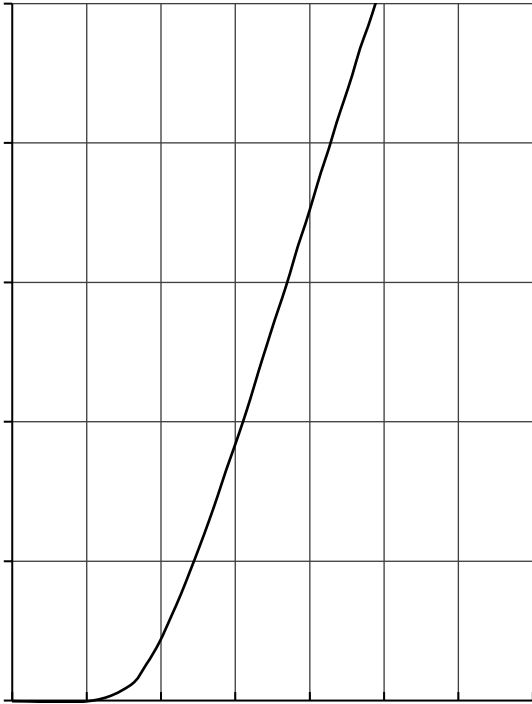
### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
Repetitive Peak Reverse Voltage	$V_{RRM}$	$T_j=25$	1600	V
Average output Current 50/60Hz, sine wave	$I_{F(AV)}$	$T_C=100$	50	A
Surge Forward Current	$I_{FSM}$	$V_R=0V, t_p=10ms, T_j=25$	520	A
$I^2t$ -value	$I^2t$	$V_R=0V, t_p=10ms, T_j=25$	1300	A <sup>2</sup> s

### Characteristic Values

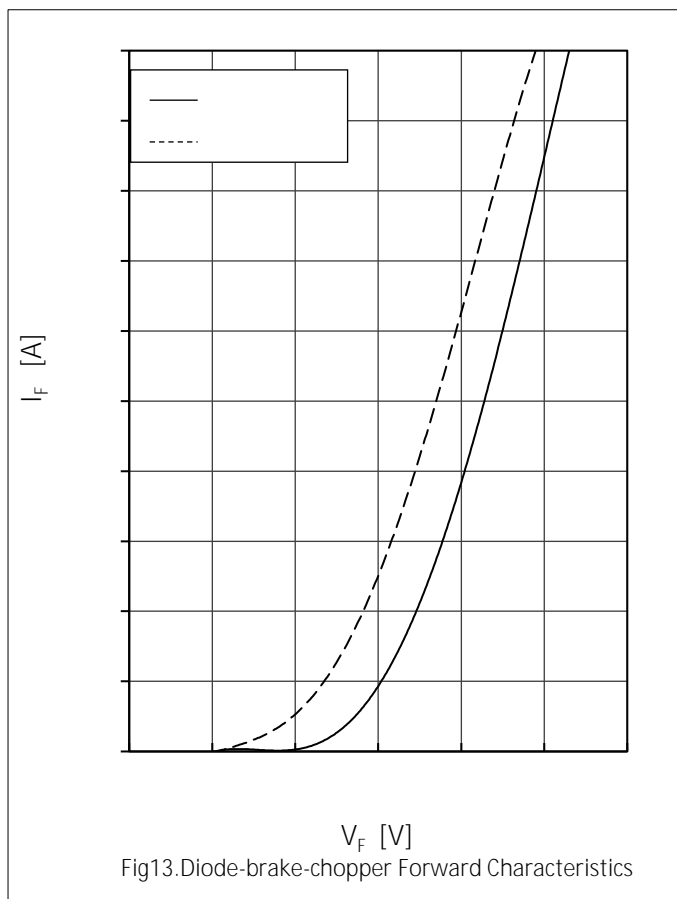
Parameter	Symbol	Conditions
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**MG50**



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COMPLIANT  
RoHS