



JLSW400B170R62E7DN

62 mm module with TRENCHSTOP IGBT7 and emitter controlled 7 diode



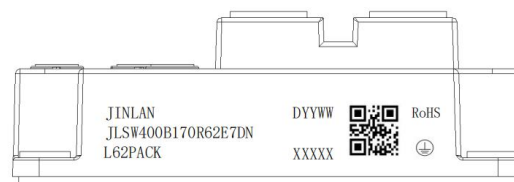
Features

- VCE(sat) with positive temperature coefficient
- Low inductance case
- Fast & soft reverse recovery anti-parallel FWD
- 10 μ s short circuit capability
- Low switching losses
- Isolated copper baseplate using DBC technology
- Standard housing



62 Pack

MARKING DIAGRAM



Typical Applications

- Switching mode power supply
- Inductive heating
- Electronic welder

JINLAN

= Company Name

JLSW400B170R62E7DN

= Specific Device Code

YYWW

= Year and Work Week Code

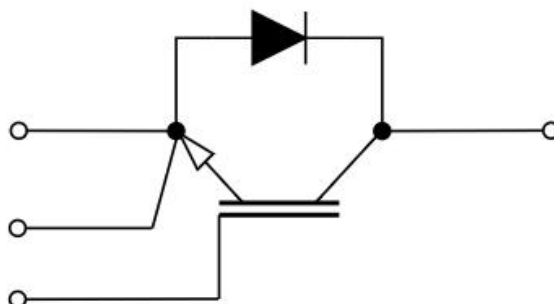
XXXXX

= Serial Number

QR code

= Custom Assembly Information

Description





Package Insulation coordination

Parameter	Symbol	Note or test condition	Values	Unit
Isolation test voltage	V_{ISOL}	RMS,f=50Hz,t=60s	4.0	kV
Internal isolation		basic insulation(class 1,IEC 61140)	Al_2O_3	
Creepage distance	d_{creep}	terminal to heatsink	20	mm
Clearance	d_{clear}	terminal to heatsink	11	mm
Comparative tracking index (electrical)	CTI		≥ 200	
RTI Elec.	RTI	housing	≥ 175	$^{\circ}C$

Package Characteristic values

Parameter	Symbol	Note or test condition	Values			Unit
			Min.	Typ.	Max.	
Storage Temperature Range	T_{STG}		-40		150	$^{\circ}C$
Module lead resistance, terminals - chip	R_{CC*EE}	$T_c=25^{\circ}C$,per switch	--	0.50	--	m Ω
Mounting torque for module mounting	M	Terminal Connection Torque, Screw M4	1.1	--	2.0	Nm
		Terminal Connection Torque, Screw M6	2.5	--	5.0	
		Mounting Torque, Screw M6	3.0	--	5.0	
Weight	G		--	300	--	g



IGBT

Absolute Maximum Ratings (T_c = 25°C unless otherwise noted)

Symbol	Description	Value	Unit
V _{CES}	Collector-Emitter Voltage	1700	V
V _{GES}	Gate-Emitter Voltage	±30	V
I _{CDC}	Continuous Collector Current @ T _c = 80°C (T _{JMAX} = 175°C)	400	A
I _{CM}	Pulsed Collector Current, t _p limited by T _{vj max}	800	A
T _{jmax}	Maximum Junction Temperature	175	°C

Characteristics (T_c = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V _{CE(sat)}	Collector-Emitter Saturation Voltage	V _{GE} = 15 V, I _C = 400 A, T _{vj} = 25°C	--	1.7	1.9	V
		V _{GE} = 15 V, I _C = 400 A, T _{vj} = 150°C	--	1.9	--	
V _{GE(TH)}	Gate-Emitter Threshold Voltage	V _{GE} = V _{CE} , I _C = 18.0 mA, T _{vj} = 25°C	5.0	5.75	6.5	V
I _{CES}	Collector-Emitter Cutoff Current	V _{GE} = 0 V, V _{CE} = V _{CES} , T _{vj} = 25°C	--	--	4.0	mA
I _{GES}	Gate-Emitter Leakage Current	V _{GE} = V _{GES} , V _{CE} = 0 V, T _{vj} = 25°C	--	--	400	nA
R _{Gint}	Internal Gate Resistance	f=1MHz	--	1.0	--	Ω
C _{ies}	Input Capacitance	V _{CE} =25V, f=1MHz, V _{GE} =0 V	--	8.4	--	nF
C _{oes}	Output Capacitance		--	6.2	--	nF
C _{res}	Reverse Transfer		--	1.4	--	nF
Q _G	Gate Charge	V _{CC} = 900 V, V _{GE} = 15 V, I _C = 400 A	--	4	--	μC
t _{d(on)}	Turn-On Delay Time	V _{CE} = 900 V, I _C = 400A R _{G(on)} = 5 Ω, R _{G(off)} = 5 Ω V _{GE} = ±15V Inductive Load T _{vj} = 25°C	--	0.36	--	ns
t _r	Rise Time		--	0.12	--	
t _{d(off)}	Turn-off Delay Time		--	0.70	--	
t _f	Fall Time		--	0.20	--	
E _{on}	Turn-On Switching Loss per Pulse		--	95	--	mJ
E _{off}	Turn Off Switching Loss per Pulse		--	77	--	
E _{ts}	Total Switching Loss		--	172	--	
t _{d(on)}	Turn-On Delay Time	V _{CE} = 900 V, I _C = 400A R _{G(on)} = 5 Ω, R _{G(off)} = 5 Ω V _{GE} = ±15V Inductive Load T _{vj} = 150 °C	--	TBD	--	ns
t _r	Rise Time		--	TBD	--	
t _{d(off)}	Turn-off Delay Time		--	TBD	--	
t _f	Fall Time		--	TBD	--	
E _{on}	Turn-on Switching Loss per Pulse		--	TBD	--	mJ
E _{off}	Turn Off Switching Loss per Pulse		--	TBD	--	
E _{ts}	Total Switching Loss		--	TBD	--	
I _{SC}	SC Data	t _{SC} ≤ 10 μs, V _{GE} = 15V, T _{vj} = 150°C, V _{CC} = 100V	--	1800	--	A
R _{thJC}	Thermal resistance	Junction-to-Case (per IGBT)	--	TBD	--	K/W
T _{vj op}		Temperature under switching conditions	-40		175 ¹⁾	°C

¹⁾T_{vj op} > 150°C is only allowed for operation at overload conditions.



Diodes

Absolute Maximum Ratings (T_c = 25°C unless otherwise noted)

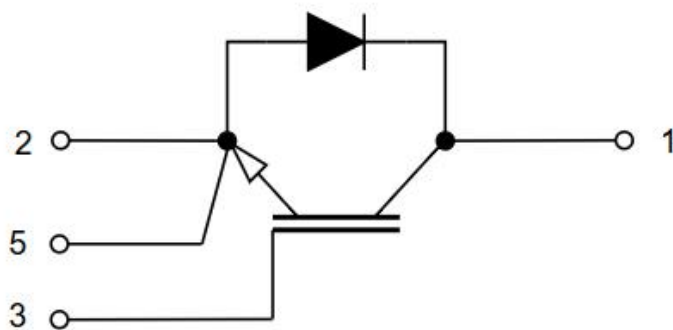
Symbol	Description	Value	Unit
V _{RRM}	Repetitive Peak Reverse Voltage	1700	V
I _F	Diode Continuous Forward Current @ T _c =80°C	400	A
I _{FRM}	Diode Maximum Forward Current t _p =1ms	800	A

Characteristics (T_c=25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V _F	Diode Forward Voltage	I _F = 400 A, V _{GE} = 0 V, T _{vj} = 25°C	--	2.90	3.60	V
		I _F = 400 A, V _{GE} = 0V, T _{vj} = 150°C	--	2.80	--	
Q _r	Recovered Charge	V _{CC} = 900 V, I _C = 400 A R _{Gon} = 5 Ω, R _{Goff} = 5 Ω V _{GE} = ±15V Inductive Load T _{vj} = 25°C	--	28.8	--	μC
IRM	Peak Reverse Recovery Current		--	300	--	A
E _{rec}	Reverse Recovery Energy		--	10.4	--	mJ
Q _r	Recovered Charge	V _{CC} = 900 V, I _C = 400 A R _{Gon} = 5Ω, R _{Goff} = 5Ω V _{GE} = ±15V Inductive Load T _{vj} = 150°C	--	TBD	--	μC
IRM	Peak Reverse Recovery Current		--	TBD	--	A
E _{rec}	Reverse Recovery Energy		--	TBD	--	mJ
R _{thJC}	Thermal resistance	Junction-to-Case (per diode)	--	TBD	--	K/W
T _{vj op}		Temperature under switching conditions	-40		175 ²⁾	°C

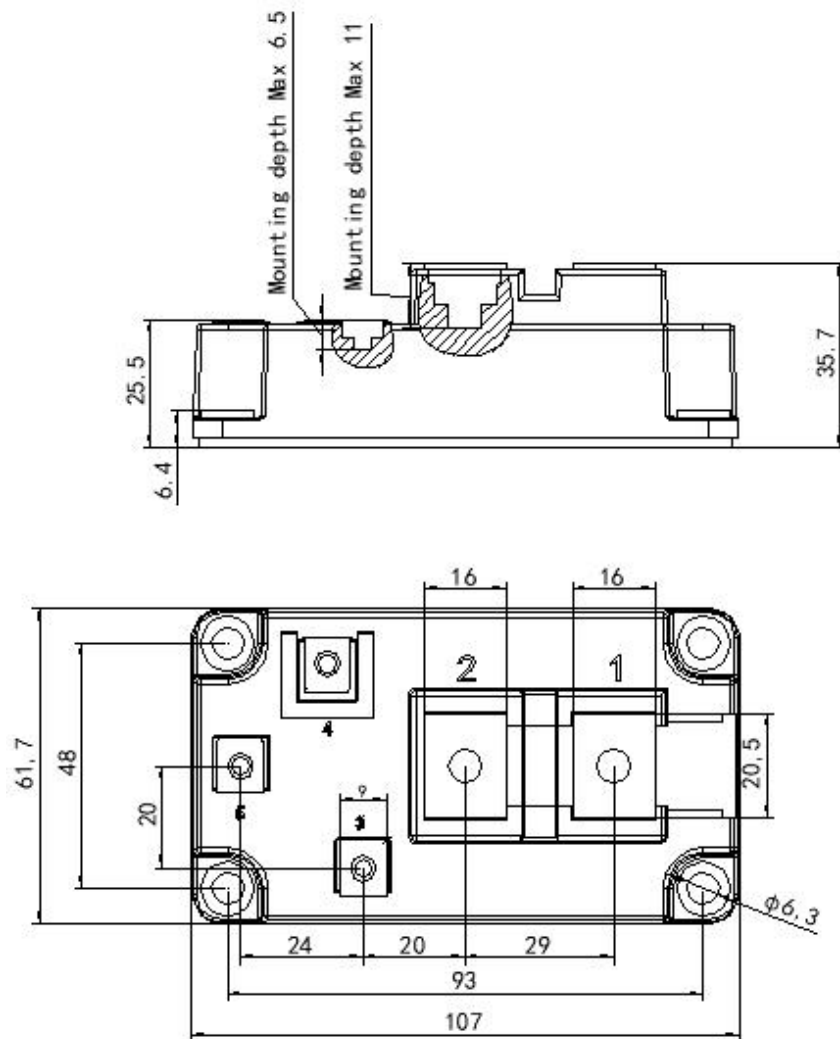
²⁾T_{vj op} > 150°C is only allowed for operation at overload conditions.

CIRCUIT DIAGRAM





PACKAGE DIMENSION



REVISION HISTORY

Document version	Date of release	Description of changes
Rev.00	2025-06-06	Preview



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