LGM40PI120C1T3A

1200V/40A PIM in one-package

FEATURES

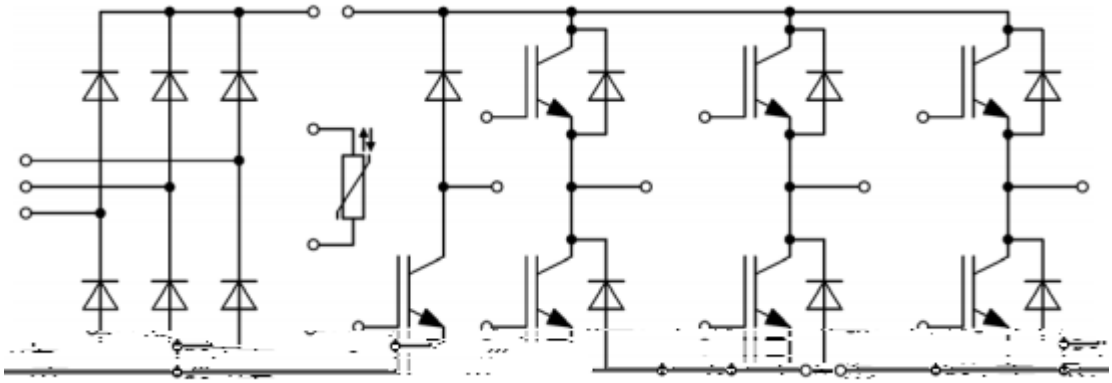
- V_{CEsat} with positive temperature coefficient
- Low V_{CEsat}
- Low inductance case
- 10μs short circuit capability
- Isolated copper baseplate using DBC technology

Preliminary Data
VCES = 1200V
IC nom = 40A / ICRM = 80A

APPLICATION

- Motor drivers
- Air Conditioning
- Auxiliary inverters

Equivalent Circuit Schematic



LGM40

IGBT, Brake-Chopper
Maximum Rated Values

Parameter	Conditions	Symbol	Values	Units
Collector-emitter voltage	Tvj = 25°C	V_{CES}	1200	V
Continuous DC collector current	T_C = 100°C, Tvj max = 175°C T_C = 25°C, Tvj max = 175°C	I_C	15 30	A
Repetitive peak collector current	t_P = 1 ms	I_{CRM}	30	A
Total power dissipatioo				n

Parameter

Diode, Brake-Chopper
Maximum Rated Values

Parameter	Conditions	Symbol	Values	Units
Repetitive peak reverse voltage	Tvj = 25°C	VRRM	1200	V
Continuous DC forward current		IF	15	A
Repetitive peak forward current	t_P = 1 ms	IFRM	30	A

Characteristic Values

Parameter	Conditions	Symbol	Values			Units
			Min.	Typ.	Max.	
Forward voltage	I_F = 15 A, V_{GE} = 0 V Tvj = 25°C	V_F		1.9		V
Peak reverse recovery current	I_F = 15 A, - d_{iF}/d_t = 1200 A/µs (Tvj=150°C) V_R = 600 V, VGE = -15 V Tvj = 25°C	I_{RR}		24		A
Recovered charge		Q_{RR}		1.8		µC
Reverse recovery energy		E_{rec}		0.35		mJ
Thermal resistance, junction to case	per diode	R_{thJC}		1.68	1.8	K/W
Thermal resistance, case to heatsink	per diode I_{Paste} = 1 W/(m·K) / I_{grease} = 1 W/(m·K)	R_{thCH}		1.2		K/W
Temperature under switching conditions		$T_{vj\ op}$	-40			

Module

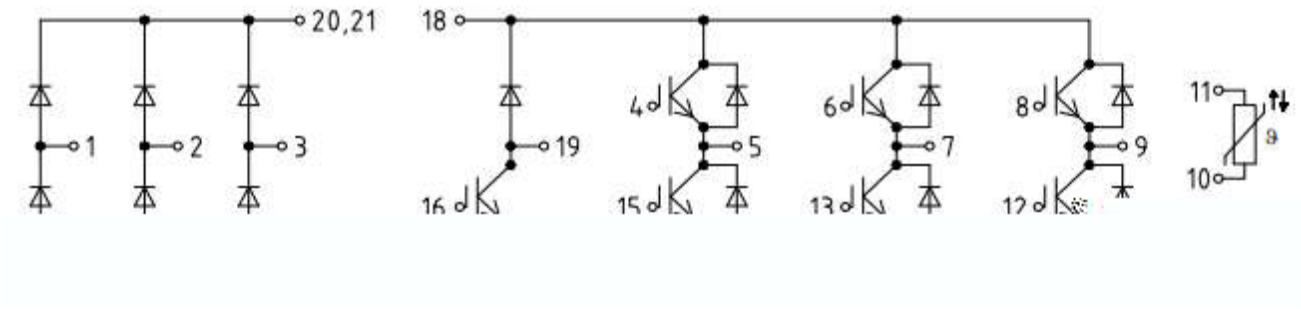
Maximum Rated Values

Parameter	Conditions	Symbol	Values	Units
Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	VISOL	2.5	kV
Internal isolation	basic insulation (class 1, IEC 61140)		Al_2O_3	
Creepage distance	terminal to heatsink terminal to terminal		10	mm
Clearance	terminal to heatsink terminal to terminal		7.5	mm
Comperative tracking index		CTI	＞200	

Characteristic Values

Parameter	Conditions	Symbol	Values			Units
			Min.	Typ.	Max.	
Stray inductance module and fixture		L_{sCE}		60		nH
Module lead resistance, terminals - chip	TC = 25°C, per switch	$R_{CC'+EE'}$ $R_{AA'+CC'}$		4 3		mΩ
Storage temperature		T_{stg}	-40		125	°C
Mountig force per clamp		F	3		6	N
Weight		G		200		g

Circuit diagram



Package outlines (mm)