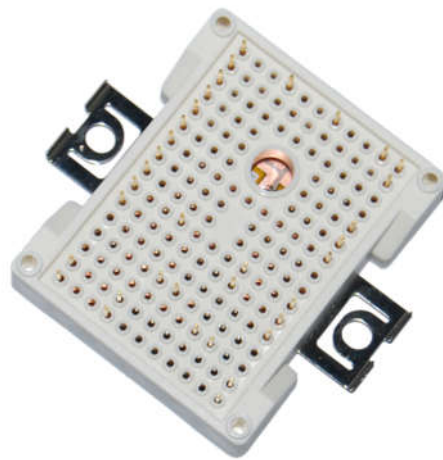


FEATURES

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

IGBT

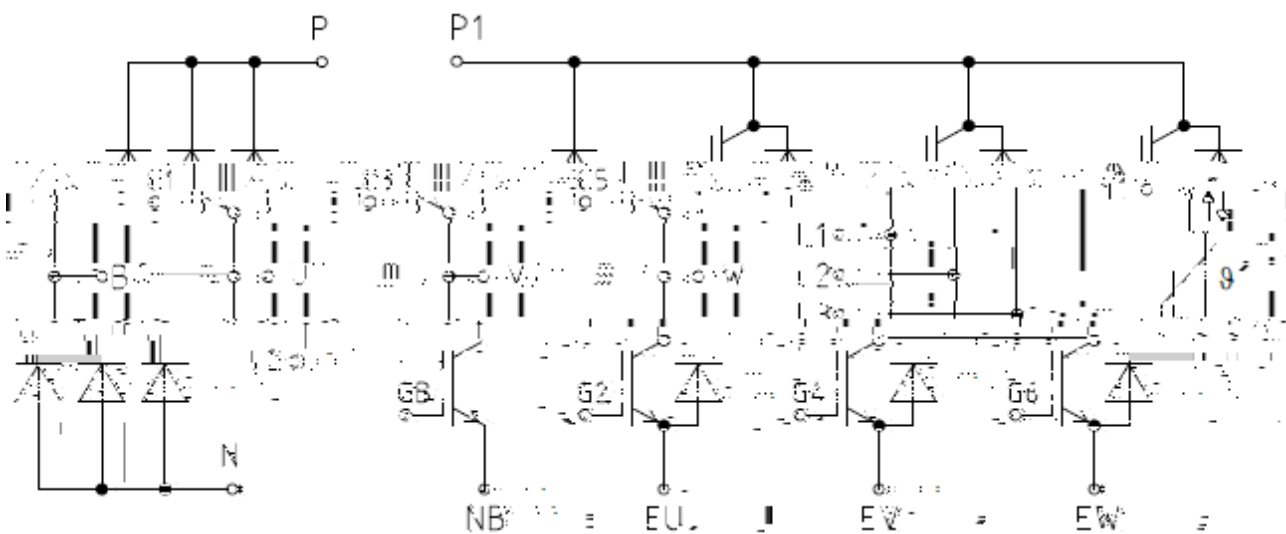
$V_{CES} = 1200V$
 $I_{C\ nom} = 25A / I_{CRM} = 50A$



APPLICATION

- Inverter for motor drive Inverter
- Air Conditioning
- Auxiliary inverters
- Uninterruptible power supply

Equivalent Circuit Schematic



LGM25PJ120E2T1S

Diode, Inverter

Maximum Rated Values

Repetitive peak reverse voltage	$T_{vj} = 25^{\circ}\text{C}$	VRRM	1200	V
Continuous DC forward current		IF	25	A
Repetitive peak forward current	$t_p = 1\text{ ms}$	IFRM	50	A

Characteristic Values

Forward voltage	$I_F = 25\text{ A}, V_{GE} = 0\text{ V}$ $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	V_F	1.95 1.85	V	
Peak reverse recovery current	$I_F = 25\text{ A}, -di_F/dt = 1200\text{ A}/\mu\text{s} (T_{vj} = 150^{\circ}\text{C})$	I_{RM}	43 46	A	
Recovered charge	$V_R = 600\text{ V}, V_{GE} = -15\text{ V}$ $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	Q_r	1.5 2.8	μC	
Reverse recovery energy		E_{rec}	0.95 1.70	mJ	
Thermal resistance, junction to case	per diode	R_{thJC}	0.9	1.05	K/W
Thermal resistance, case to heatsink	per diode $I_{paste} = 1\text{ W}/(\text{m}\cdot\text{K}) / I_{grease} = 1\text{ W}/(\text{m}\cdot\text{K})$	R_{thCH}	0.82		K/W
Temperature under switching conditions		$T_{vj\text{ op}}$	-40	150	$^{\circ}\text{C}$

Diode
Maximum

IGBT, Brake-Chopper
Maximum Rated Values

Collector-emitter voltage	Tvj = 25°C	V _{CES}	1200	V
Continuous DC collector current	T _C = 95°C, Tvj max = 175°C	I _{C nom}	25	A
Repetitive peak collector current	t _p = 1 ms	I _{CRM}	50	A
Gate-emitter peak voltage		V _{GES}	± 20	V

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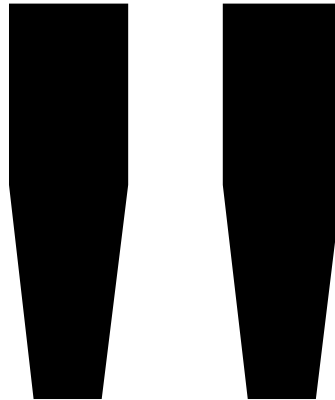
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Diode, Brake-Chopper Maximum Rated Values

Repetitive peak reverse voltage	$T_{vj} = 25^{\circ}\text{C}$	V_{RRM}	1200	V
Continuous DC forward current		I_F	15	A
Repetitive peak forward current	$t_p = 1\text{ ms}$	I_{FRM}	30	A

Characteristic Values

Forward voltage	$I_F = 10\text{ A}, V_{GE} = 0\text{ V}$ $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	V_F		1.95 2.0		V
Peak reverse recovery current	$V_R = 600\text{ V}, I_F = 10\text{ A},$ $V_{GE} = -15\text{ V}$ $T_{vj} = 25^{\circ}\text{C}$ $T_{vj} = 125^{\circ}\text{C}$	I_{RM}		14.5 13.6		A



Module

Maximum Rated Values

Isolation test voltage	RMS, f = 50 Hz, t = 1 min.	VISOL	2.5	kV
Internal isolation	basic insulation (class 1, IEC 61140)		Al ₂ O ₃	
Creepage distance	terminal to heatsink		11.5	mm
	terminal to terminal		6.3	
Clearance	terminal to heatsink		10	mm
	terminal to terminal		5	
Comperative tracking index		CTI	>200	

Characteristic Values

Fig. 1 output characteristic IGBT, Inverter

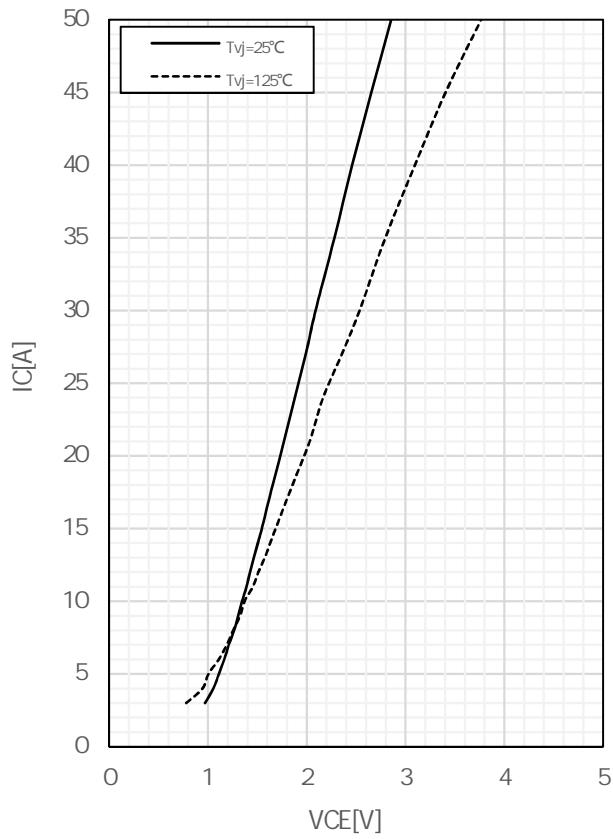


Fig.2 output characteristic IGBT, Inverter

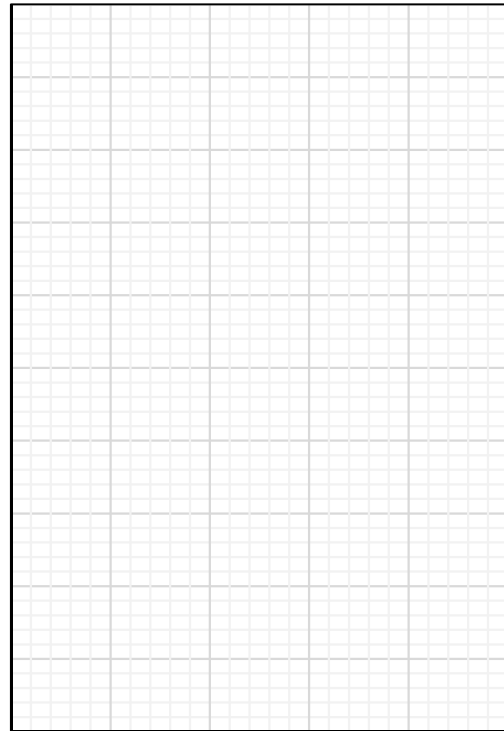


Fig. 3 transfer characteristic IGBT, Inverter

Fig. 4 switching losses IGBT, Inverter

Fig. 5 switching losses IGBT, Inverter

Fig. 6 transient thermal impedance IGBT, Inverter

Fig. 7 NTC-Thermistor-temperature characteristic

Fig. 9 switching losses Diode, Inverter

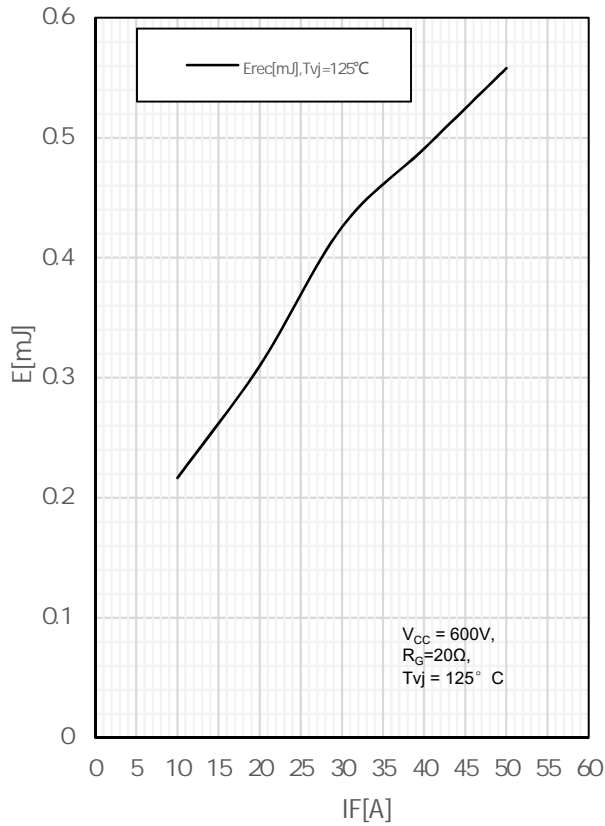


Fig. 10 switching losses Diode, Inverter

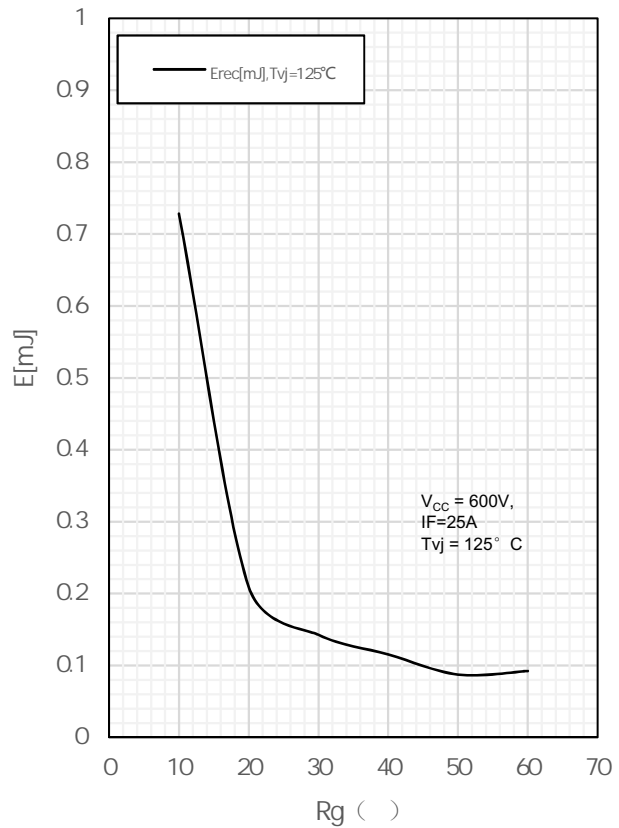


Fig. 11 transient thermal impedance Diode, Inverter

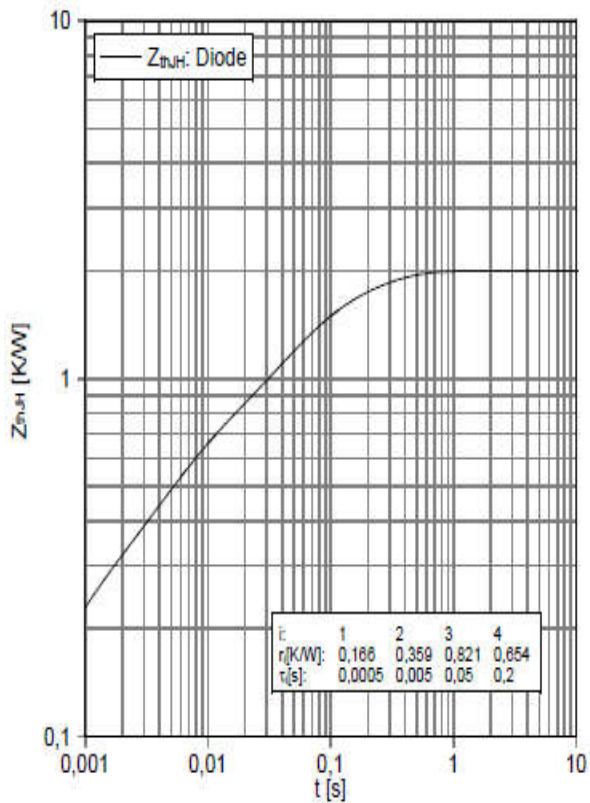


Fig. 12 forward characteristic of Diode, Rectifier

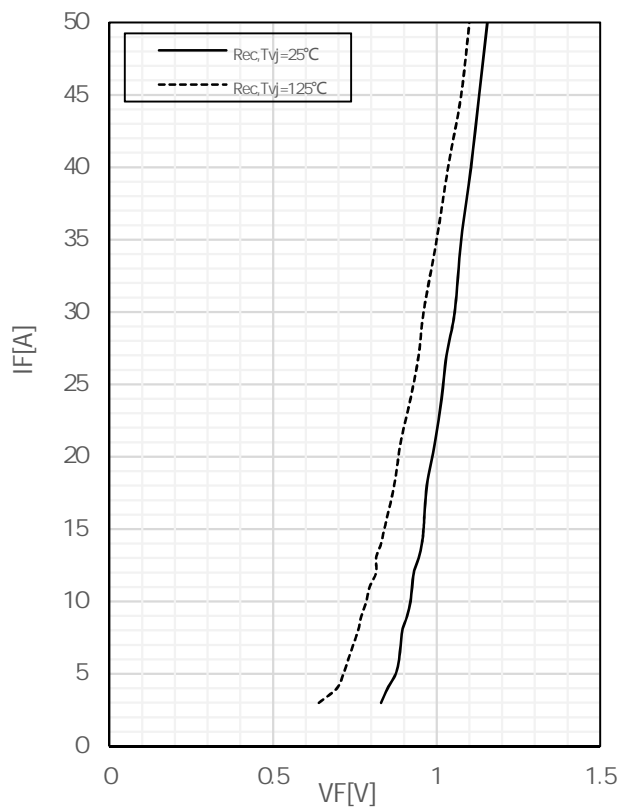


Fig. 13 output characteristic IGBT, Brake-Chopper

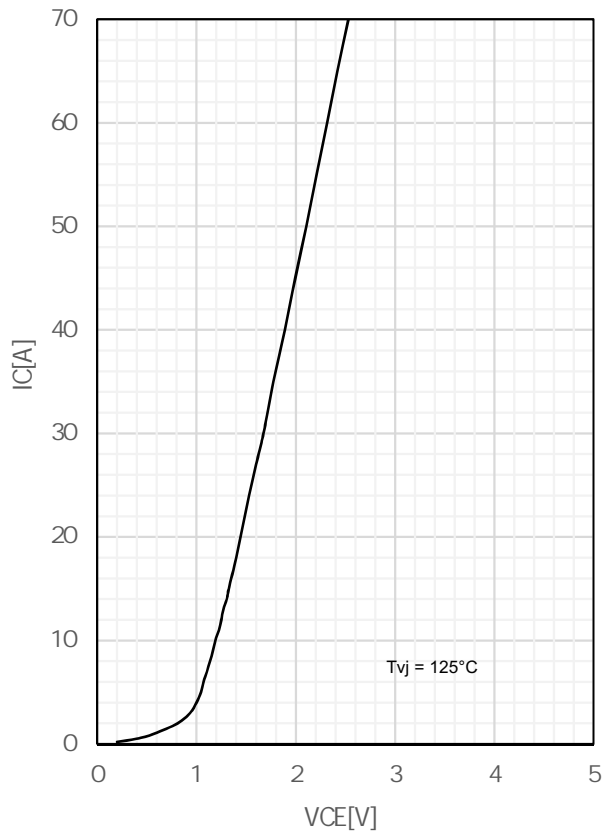
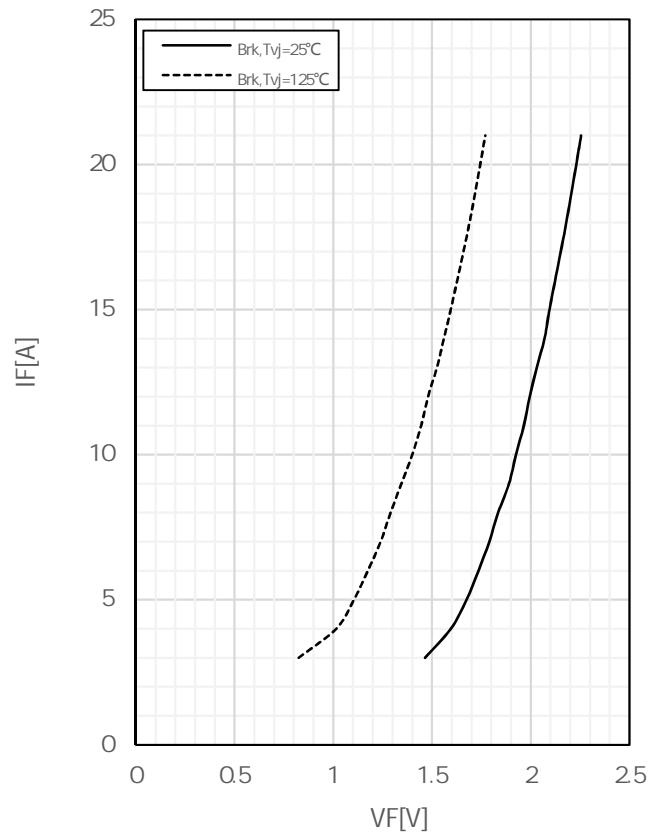
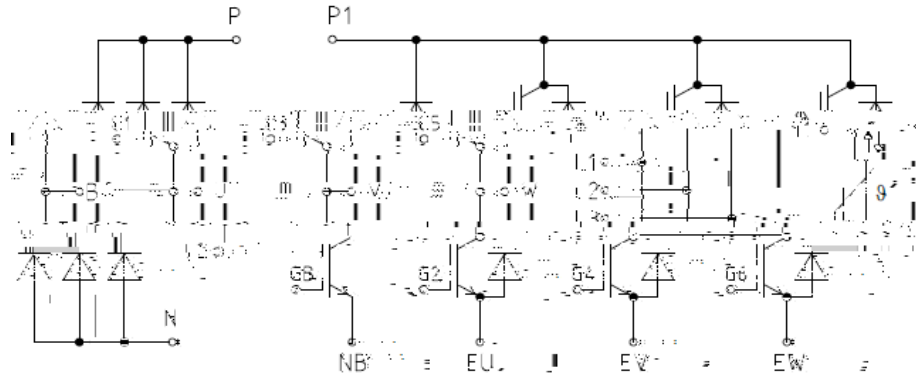


Fig. 14 forward characteristic of Diode, Brake-Chopper



Circuit diagram



Package outlines (mm)

