

## Features

- Low Switching Losses
- $V_{ce(sat)}$  with positive temperature coefficient
- Low Inductance
- Isolated copper baseplate using DBC technology
- Maximum Junction Temperature 175°C
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note 1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Applications

- AC and DC motor control
- PFC
- SMPS
- Brake switch

Parameter		Symbol	Rating	Unit
Collector-Emitter Voltage@ $V_{GE}=0V, I_C=1mA, T_{vj}=25^{\circ}C$		$V_{CES}$	1200	V
Continuous Collector Current @ $T_C=80^{\circ}C$		$I_C$	100	A
Repetitive Peak Collector Current @ $T_p=1ms$		$I_{CRM}$	200	A
Gate-Emitter Voltage@ $T_{vj}=25^{\circ}C$		$V_{GE}$	$\pm 20$	V
Isolation Voltage @ $f=50Hz, t=1min$		$V_{isol}$	2500(Min)	V
Weight of Module		G	35	g
Module Electrodes Torque:M4		$M_t$	0.7~1.5	N*m
Module-to-Sink Torque :M4		$M_S$	0.7~1.5	N*m
Total Power Dissipation (IGBT-Inverter)	$T_C=25^{\circ}C$	$P_{tot}$	535	W
	$T_{vjmax}=175^{\circ}C$			

Note:

1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7a.

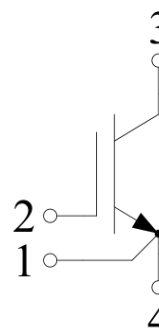
# IGBT Modules

## 1200V 100A

GJ



Circuit Diagram



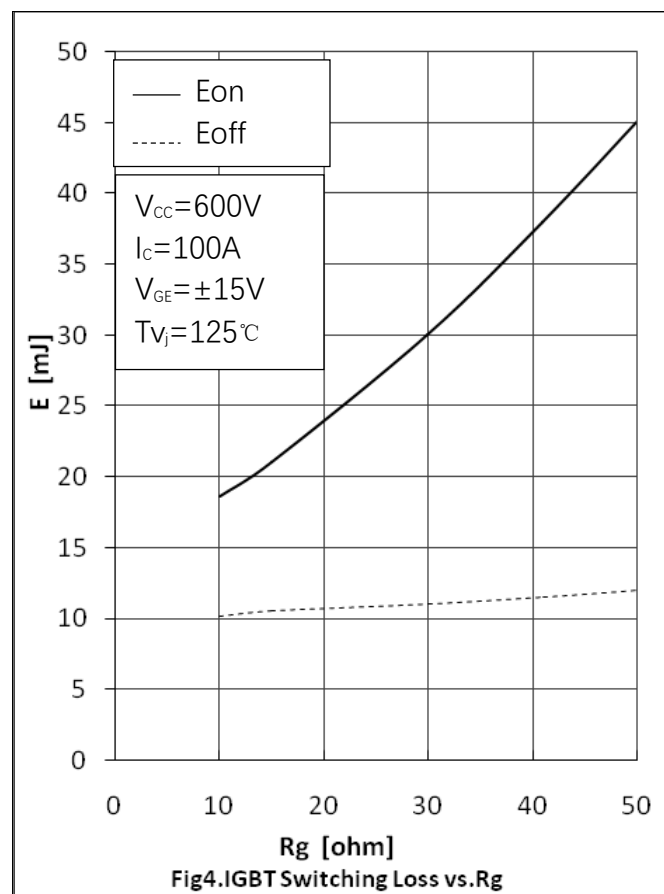
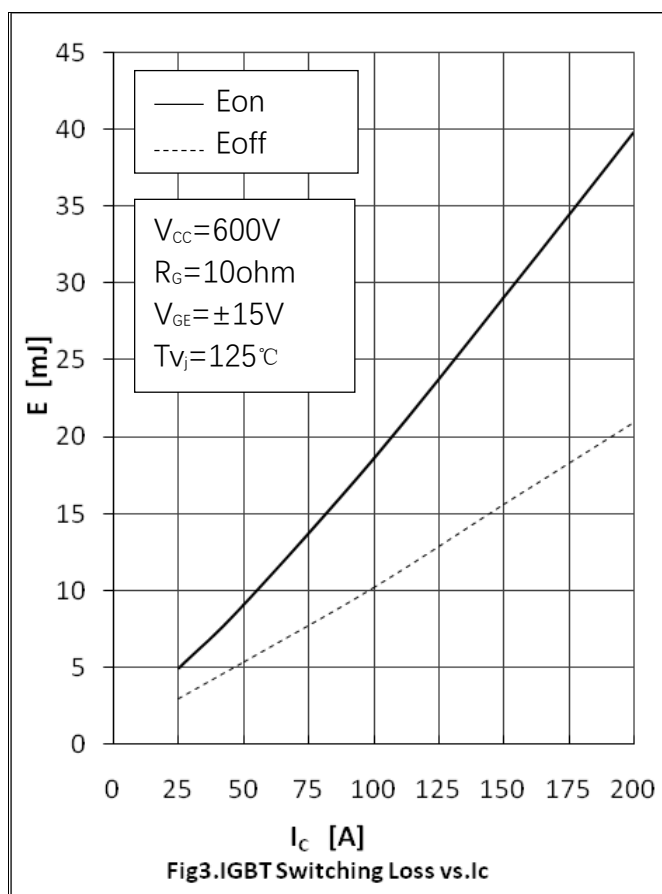
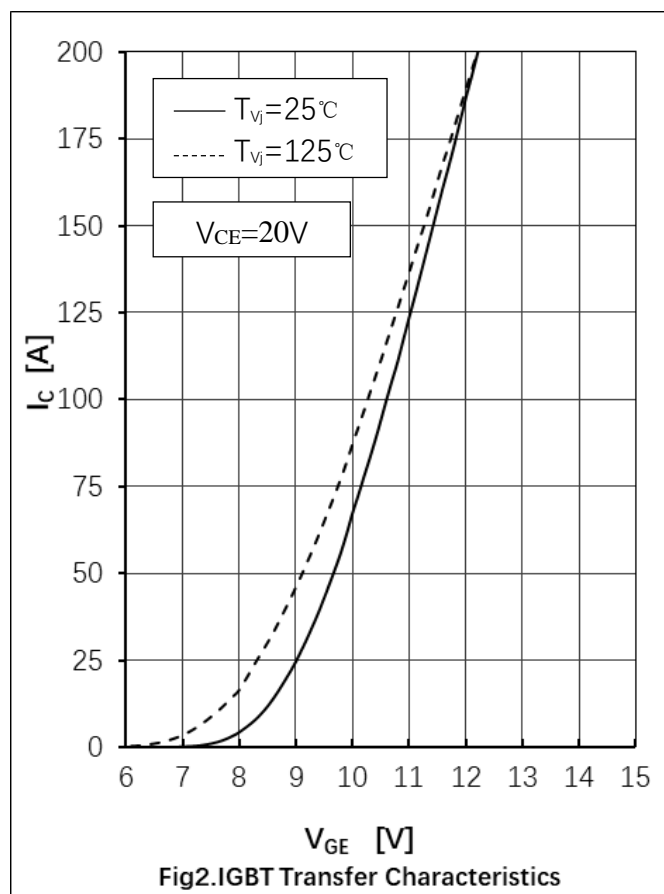
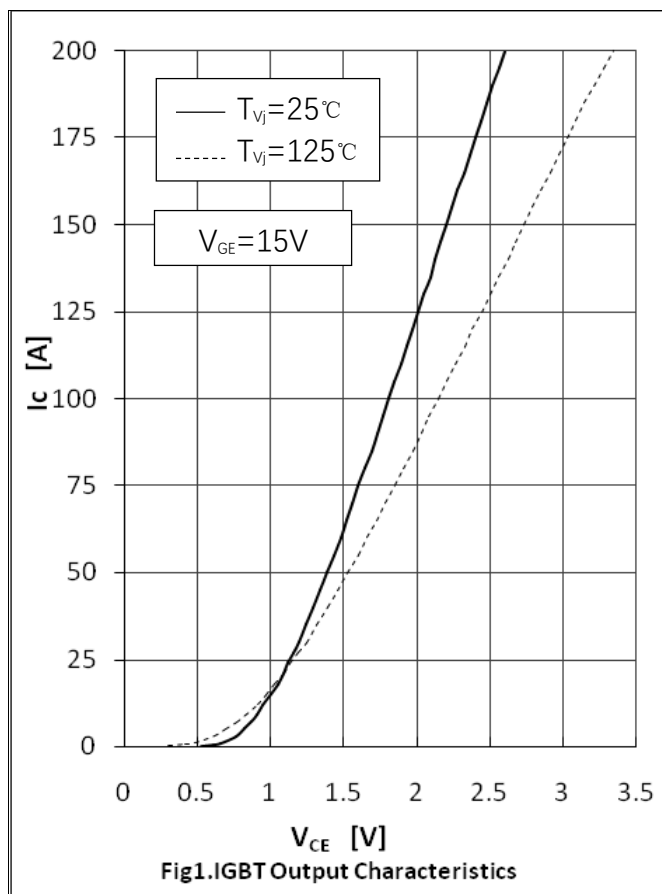
**Electrical Characteristics of IGBT @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Gate-emitter Threshold Voltage	$V_{GE(th)}$	$I_C=4mA, V_{CE}=V_{GE}, T_{vj}=25^{\circ}C$	5.0	5.8	6.5	V
Collector-Emitter Cut-off Current	$I_{CES}$	$V_{CE}=1200V, V_{GE}=0V, T_{vj}=25^{\circ}C$			1.0	mA
		$V_{CE}=1200V, V_{GE}=0V, T_{vj}=125^{\circ}C$			5.0	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100A, V_{GE}=15V, T_{vj}=25^{\circ}C$		1.75	2.25	V
		$I_C=100A, V_{GE}=15V, T_{vj}=125^{\circ}C$		2.15		
		$I_C=100A, V_{GE}=15V, T_{vj}=150^{\circ}C$		2.20		
Input Capacitance	$C_{ies}$	$V_{CE}=25V, V_{GE}=0V, f=1MHz, T_{vj}=25^{\circ}C$		5.80		nF
Output Capacitance	$C_{oes}$			0.54		
Reverse Transfer Capacitance	$C_{res}$			0.35		
Internal Gate Resistance	$R_{gint}$			2.5		$\Omega$
Turn-On Delay Time	$td_{(on)}$	$V_{CE}=600V, I_C=100A, V_{GE}=\pm 15V, R_G=10\Omega, T_{vj}=25^{\circ}C$		122		ns
Rise Time	$t_r$			50		
Turn-Off Delay Time	$td_{(off)}$			335		
Fall Time	$t_f$			72		
Turn-On Energy	$E_{on}$			13.5		mJ
Turn-Off Energy	$E_{off}$			7.0		
Turn-On Delay Time	$td_{(on)}$	$V_{CE}=600V, I_C=100A, V_{GE}=\pm 15V, R_G=10\Omega, T_{vj}=125^{\circ}C$		135		ns
Rise Time	$t_r$			55		
Turn-Off Delay Time	$td_{(off)}$			460		
Fall Time	$t_f$			76		
Turn-On Energy	$E_{on}$			18.6		mJ
Turn-Off Energy	$E_{off}$			10.2		
SC Data	$I_{sc}$	$t_p \leq 10\mu s, V_{GE}=15V, T_{vj}=150^{\circ}C, V_{cc}=600V, V_{CEM} \leq 1200V$		350		A

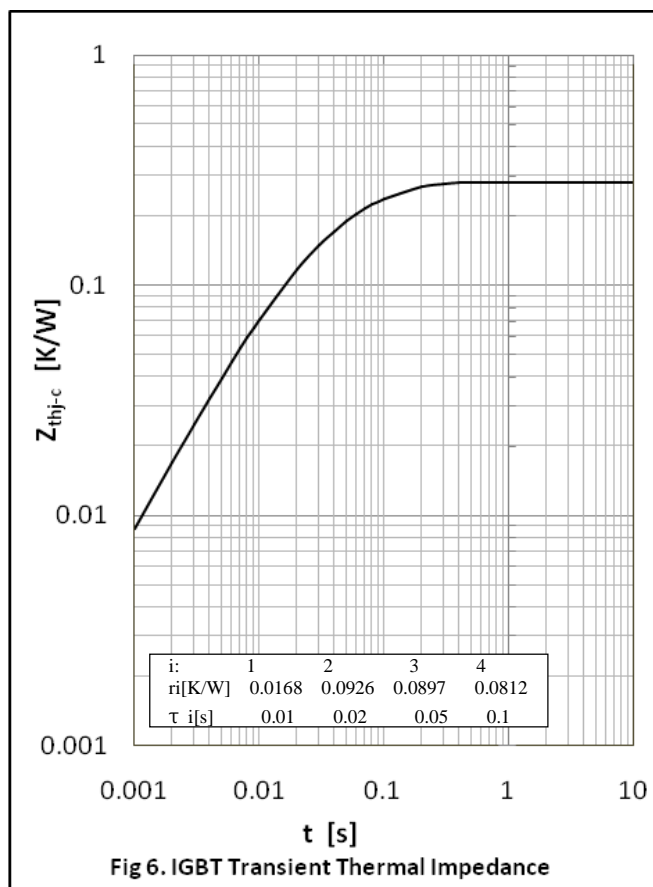
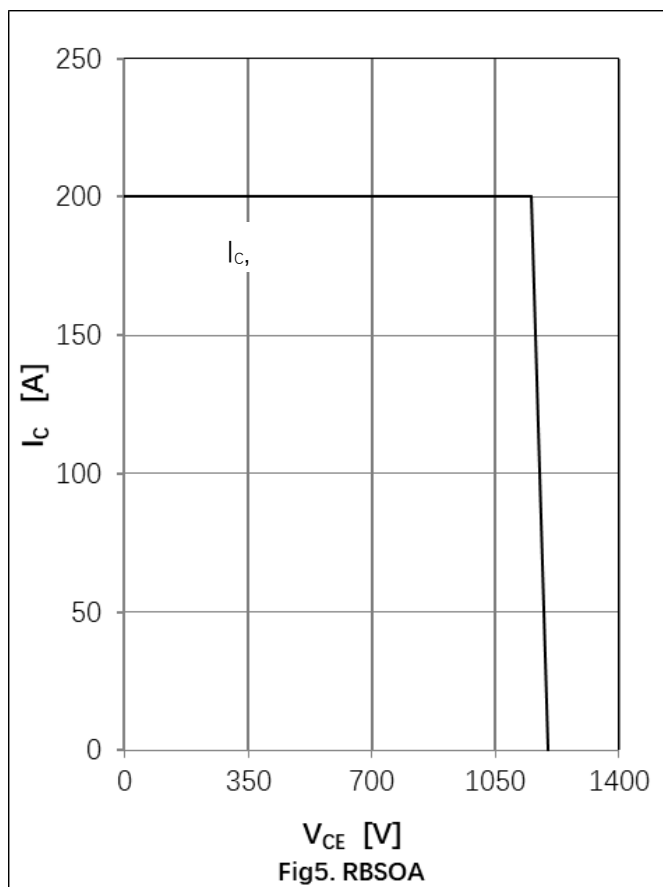
## Module Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Isolation voltage	$V_{isol}$	$t=1\text{min}, f=50\text{Hz}$	2500			V
Maximum Junction Temperature	$T_{jmax}$				175	°C
Operating Junction Temperature	$T_{vj\text{ op}}$		-40		150	°C
Storage Temperature	$T_{stg}$		-40		125	°C
Thermal Resistance Junction to Case	$R_{\theta JC}$	per IGBT			0.28	K/W
Thermal Resistance Case-to Sink	$R_{\theta CS}$	Conductive grease applied		0.15		K/W

## Curve Characteristics



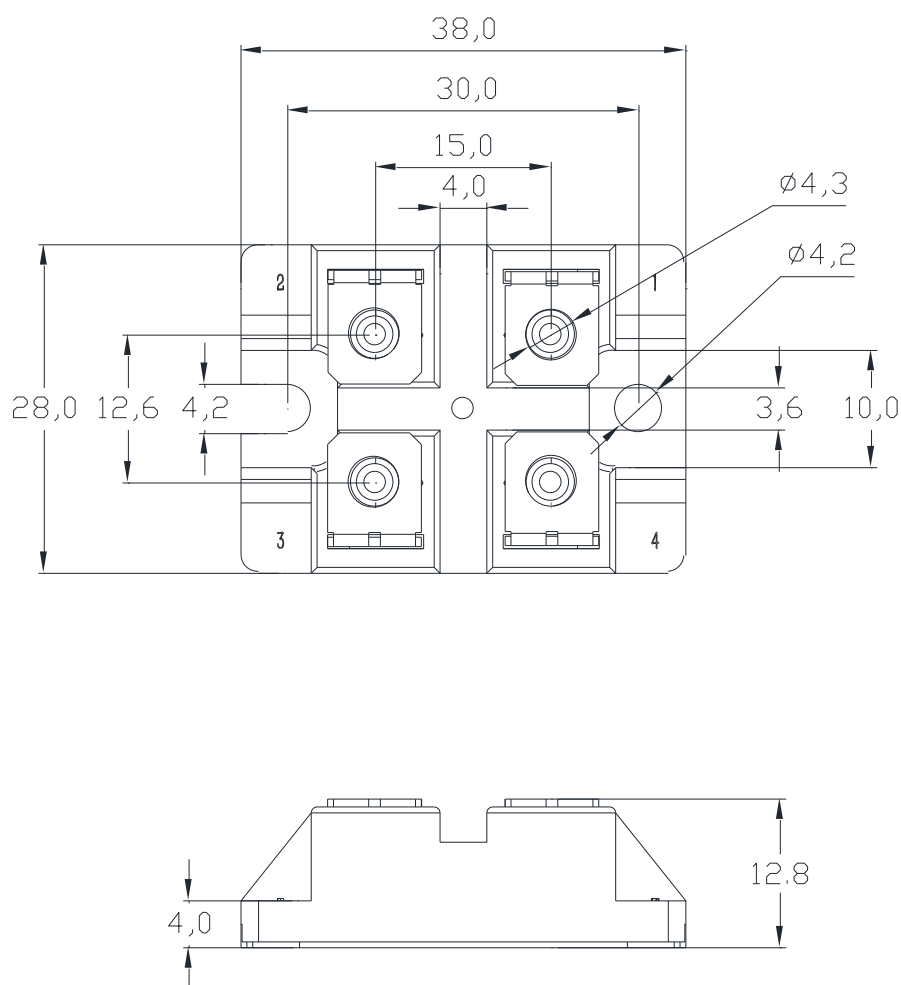
## Curve Characteristics



## Package Dimensions

# GJ

Dimensions in mm



## Ordering Information

Device	Packing
Part Number-BP	Bulk: 25pcs/Box ; 250pcs/Ctn

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