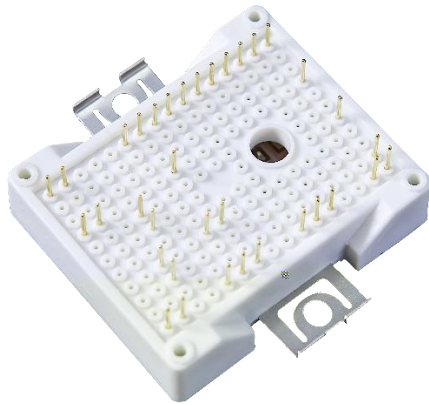


## IGBT Modules



$V_{CES}$  1  
 $I_c$

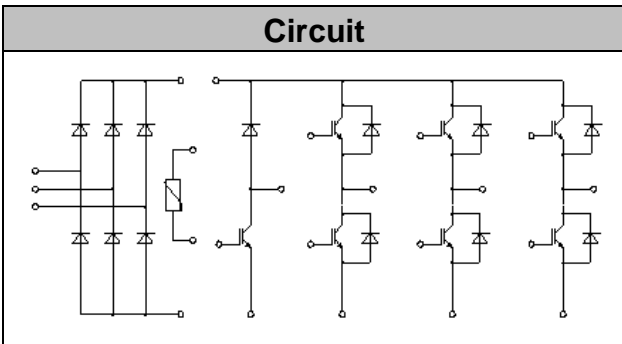
### Applications

- ( OM NM
- I . NQ ND H OM
- 0+. 0IDOMP OG+ R M P GN

### Features

- R NR DDBGN N
- R1 NOR D ND OH MPM ADDIO
- I DBANO NAM QM ID MGG2
- R D P OI N
- BCNC ND MPD = D PN
- N GO C DDFNDB O Q GBT
- ( SDIPEI DI OH MPM °C

### Circuit



## ● IGBT-inverter

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
COM HMI GB	1 .	1 1 H / °C		1
IDP FN COM PMIO		/ °C T <sub>CH</sub> S= °C		
- + F COM PMIO	-(	O HN		
O HMI GB	1 .	/ °C	±	1
/ OG+ R M ND DI	+00	/ °C / °C S		2



## ● IGBT-inverter

### Characteristic values

Parameter	Symbol	Conditions	Value			Unit		
			Min.	Typ.	Max.			
$I_{HDM} / I_{CMNC} / I_{GB}$	$I_{HDM}$	$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				1		
$I_{COM} / I_{HDM} / I_{PO} / I_{PMIO}$		$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				H		
$I_{COM} / I_{HDM} / I_{PMIO} / I_{GB}$	$I_{NO}$	$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				1		
		$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$						
		$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$						
$I_{CMB}$						P		
$I_{PO} / I_{DI}$	$I_{DN}$	$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				$I_{PO}$		
$-I_{QMIN} / I_{MINAM} / I_{DI}$	$I_{MN}$	$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				$I_{PO}$		
$I_{HDM} / I_{MGFB} / I_{PMIO}$		$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				I		
$I_{PMI} / I_{GT} / I_{DI}$	$I_{OI}$	$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				IN		
$-I_{DI} / I_{DI}$	$I_{QI}$					IN		
$I_{PM} / I_{GT} / I_{DI}$	$I_{OA}$		1	1		IN		
$I_{GD} / I_{DI}$	$I_{Q}$		1	1		IN		
$I_{NBT} / I_{DND} / I_{PMB} / I_{PMI} / I_{DI}$	$I_{I}$		-	-	$T_{case} = T_{ref}$	H		
$I_{NBT} / I_{DND} / I_{PMB} / I_{PM} / I_{DI}$	$I_{A}$		-	-	$T_{case} = T_{ref}$	H		
$I_{PMI} / I_{GT} / I_{DI}$	$I_{OI}$		$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				IN	
$-I_{DI} / I_{DI}$	$I_{QI}$						IN	
$I_{PM} / I_{GT} / I_{DI}$	$I_{OA}$			1	1		IN	
$I_{GD} / I_{DI}$	$I_{Q}$			1	1		IN	
$I_{NBT} / I_{DND} / I_{PMB} / I_{PMI} / I_{DI}$	$I_{I}$			-	-	$T_{case} = T_{ref}$	H	
$I_{NBT} / I_{DND} / I_{PMB} / I_{PM} / I_{DI}$	$I_{A}$			-	-	$T_{case} = T_{ref}$	H	
$I_{O}$				$V_{HDM} = 1, V_{CMNC} = 1, T_{case} = T_{ref}$				



## ● Diode-inverter

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
- $I_{DM} + F - Q_{MI} 1 \text{ GB}$	$1_{-}()$	$/ \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$		1
$I_{OP} \text{ PN } \square \text{ NR M PWMIO}$	$\square$			
- $I_{DM} + F \square \text{ NR M PWMIO}$	$\square - ()$	O HN		
$OQ \text{ }_{\text{CE}}$	O	$1. 1 O \text{ HN}/ \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$		N
		$1. 1 O \text{ HN}/ \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$		

### Characteristic Values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
$\square \text{ NR M } 1 \text{ GB}$	$1_{\square}$	$\square / \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$				1
		$\square / \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$				
		$\square / \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$				
- $Q_M \text{ C NB}$	$, \text{ NI}$	$\square$				P
+ $F - Q_{MI} - Q_M \text{ PWMIO}$	$\text{ NI}$	$1. 1 \text{ D O PN}$				
- $Q_{MI} - Q_M \text{ I NBT}$	$\text{ M}$	$/ \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$				H
- $Q_M \text{ C NB}$	$, \text{ NI}$	$\square$				P
+ $F - Q_{MI} - Q_M \text{ PWMIO}$	$\text{ NI}$	$1. 1 \text{ D O PN}$				
- $Q_{MI} - Q_M \text{ I NBT}$	$\text{ M}$	$/ \text{ }_{\text{CE}} \text{ }^{\circ}\text{C}$				H



● **IGBT-brake-chopper**  
Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
$I_{OH} / I_{OM} / I_{OB}$	1	1 1 H / °C		1
$I_{OP} / I_{ON} / I_{OM} / I_{PMIO}$		/ °C $T_{CH} =$ °C		
- $I_{OD} + I_{OF} / I_{OM} / I_{PMIO}$	-	0 HN		
$\theta_{H} / \theta_{M} / \theta_{B}$	1	/ °C	±	1
$\theta_{OG} / R_{M} / \theta_{ND} / \theta_{DI}$	+00	/ °C / °C		2

**Characteristic Values**

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
$\theta_{H} / \theta_{M} / \theta_{NC} / G1 / \theta_{B}$	1	1 1 H / °C				1
$\theta_{OM} / \theta_{HM} / \theta_{PO} / \theta_{PMIO}$		1 11 1 / °C				H
$\theta_{OM} / \theta_{HM} / \theta_{MDI} / \theta_{B}$	1	1 1 / °C				1
		1 1 / °C				
		1 1 / °C				
$\theta_{CN}$	,					P
$I_{PO} / \theta_{DI}$	DN	1 11 1				I
- $Q_{MI} / \theta_{MINAM} / \theta_{DI}$	MN	A ( U / °C				
$\theta_{HM} / G / F / B / \theta_{PMIO}$		1 11 1 / °C				I
$\theta_{PM} / I / GT / \theta_{DI}$	$\theta_{I}$					IN
$\theta_{DI} / \theta_{DI}$	$\theta_{Q}$					IN
$\theta_{PM} / \theta_{A} / GT / \theta_{DI}$	$\theta_{A}$	1 1				IN
$\theta_{G} / \theta_{DI}$	$\theta_{Q}$	1 1				IN
$I_{NB} / \theta_{ND} / \theta_{DI} / \theta_{PND} / \theta_{PM} / I / \theta_{DI}$	I	/ °C				H
$I_{NB} / \theta_{ND} / \theta_{DI} / \theta_{PND} / \theta_{PM} / \theta_{A} / \theta_{DI}$	A					H



/PM I GT/DH	O I					IN
- DI /DH	QI					IN
/PM A GT/DH	O A	1	1			IN
∅ G DH	Q	1	1			IN
I NBT DND DI PNB /PM I /DH	I	/CE °C				H
I NBT DND DI PNB /PM A/DH	A					H
. O	.	O PN1	1/CE °C			
		1 11 ( 1				

## ● Diode-brake-chopper

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
- $\overline{Q} + F - Q M 1 \overline{G} B$	1--(	/CE °C		1
I DP PN ∅ NR M P M I O	∅			
- $\overline{Q} + F \overline{N} R M P M I O$	∅-(	O HN		
OQ B	O	1- 1 O HN/CE °C		N
		1- 1 O HN/CE °C		

### Characteristic Values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
∅ NR M 1 GB	1∅	∅ /CE °C				1
		∅ /CE °C				
		∅ /CE °C				
- Q M C NB	, MI	∅				P
+ F- Q MI - Q M P M I O	MI	1- 1 D O PN				
- Q MI - Q M I NBT	M	/CE °C				H
- Q M C NB	, MI	∅				P
+ F- Q MI - Q M P M I O	MI	1- 1 D O PN				
- Q MI - Q M I NBT	M	/CE °C				H



## ● Diode-rectifier

### Absolute Maximum Ratings

Parameter	Symbol	Conditions	Value	Unit
- $V_{RM}$ + $F$ - $Q_{MI}$ 1 $\text{GB}$	$1_{-}$	$/_{\text{CE}}$ °C		1
$Q_{MB}$ $POPO$ $P_{MI}$ $O$ $U_{NR}$ $R$ $Q$	$1_{-}$	$/$ °C		
( $S_{DIPH}$ - ( $P_{MI}$ $O$ $O$ - $\text{M}$ $POPO$	$-$	$/$ °C		
$P_{MB}$ $R$ $M$ $P_{MI}$ $O$	$1_{-}$	$1_{-}$ $10$ $HN/_{\text{CE}}$ °C		
$Q_{\text{GB}}$	$O$	$1_{-}$ $10$ $HN/_{\text{CE}}$ °C		N

### Characteristic Values

Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
$D$ $R$ $M1$ $\text{GB}$	$1_{-}$	$/_{\text{CE}}$ °C				1
- $Q_{MI}$ $P_{MI}$ $O$	-	$/_{\text{CE}}$ °C $1_{-}$ $1$				H

## ● NTC-Thermistor

### Characteristic Values

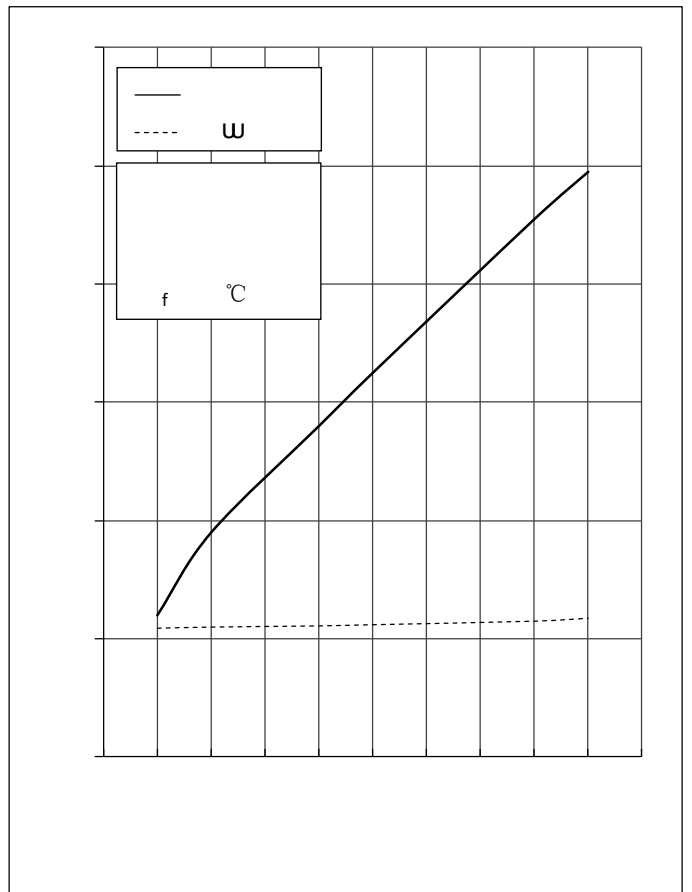
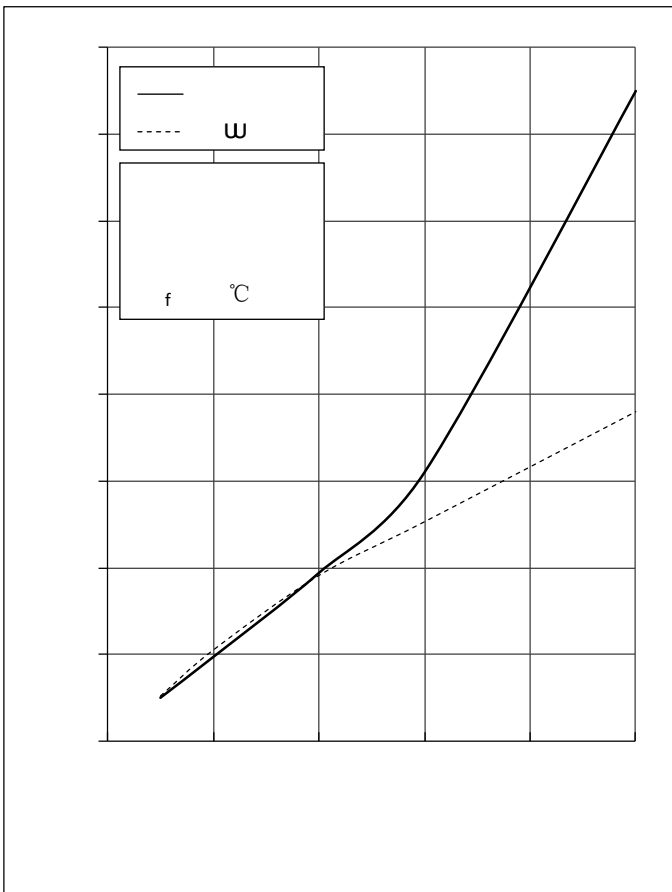
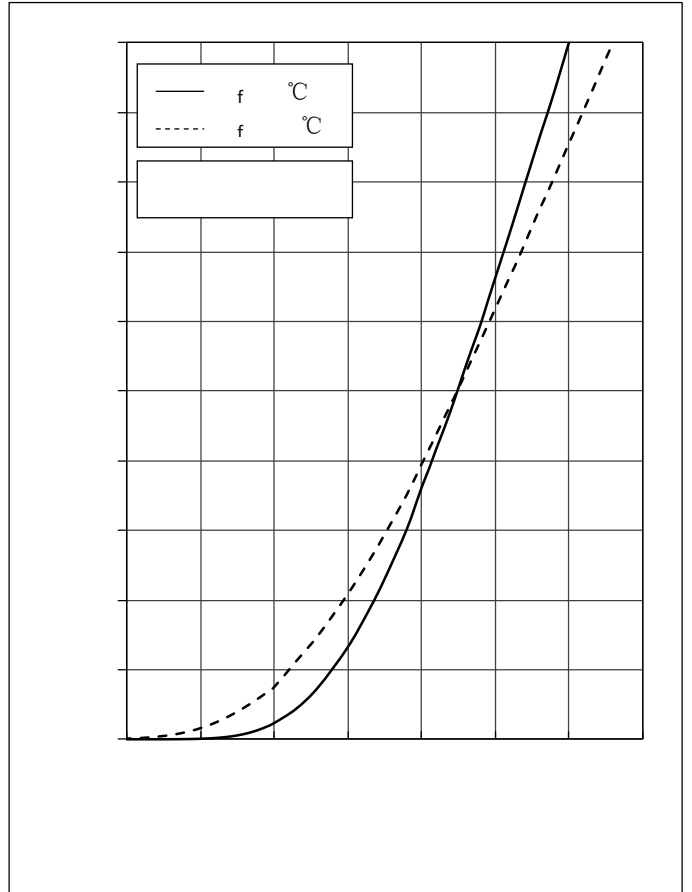
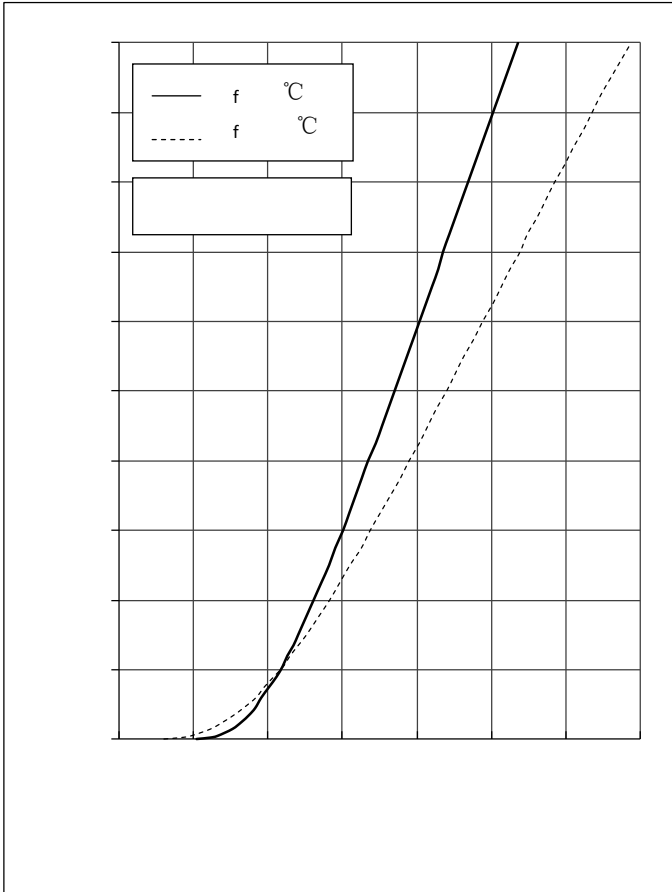
Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
- $O$ - $NDO1$	-					F
$\text{M}$ $A$ -	-	$/$ °C -				
+ $R$ $M$ $\text{DND}$ $\text{DI}$	+					H2
$Q_{\text{GB}}$		- - $S6$ $/$ & 8				&



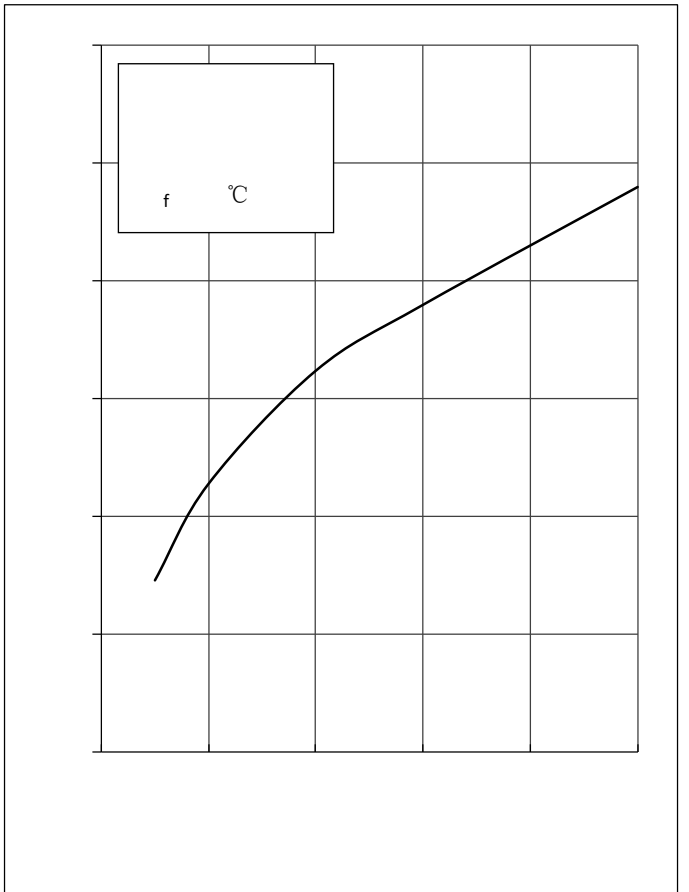
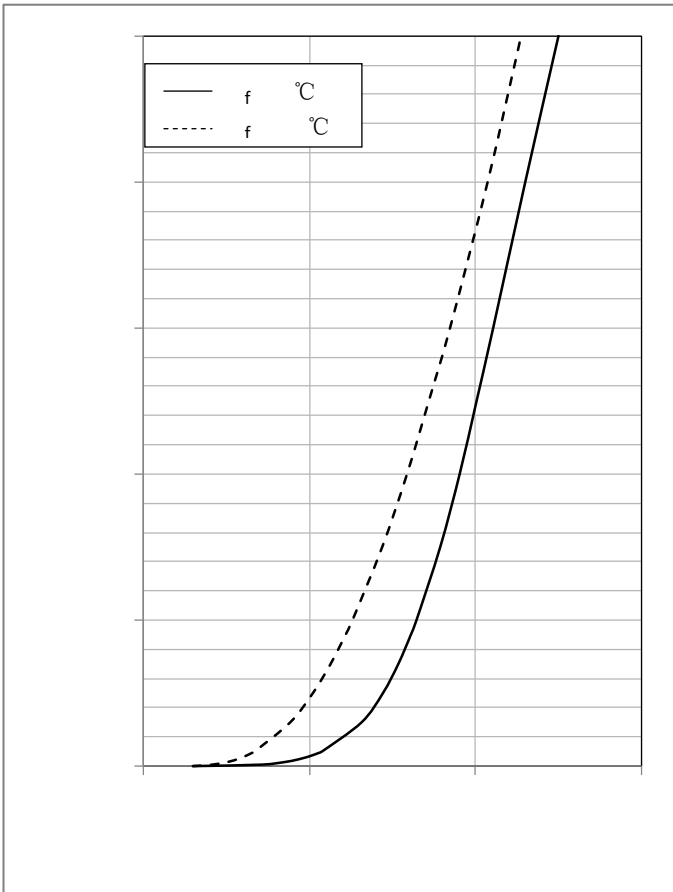
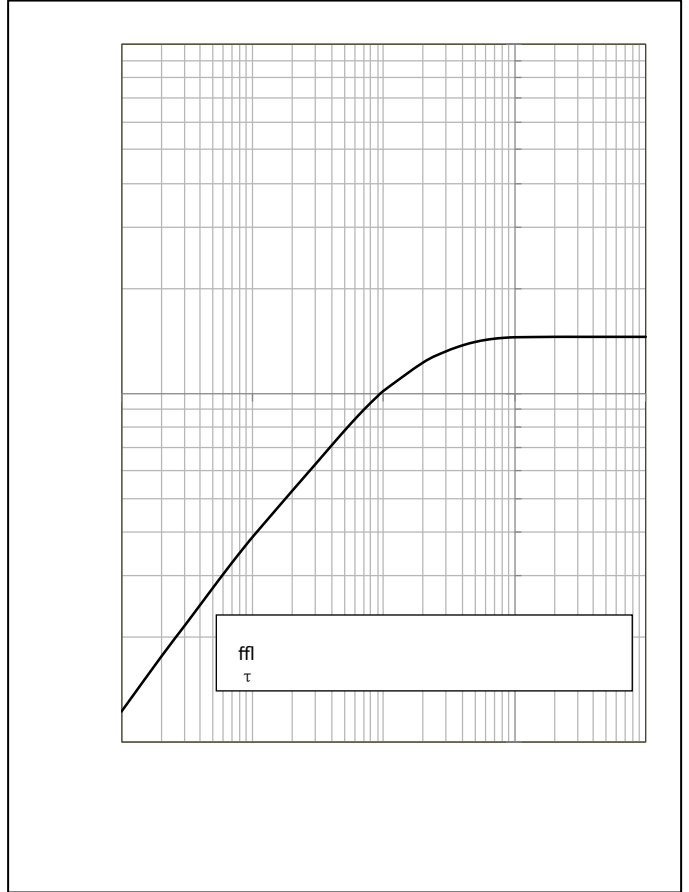
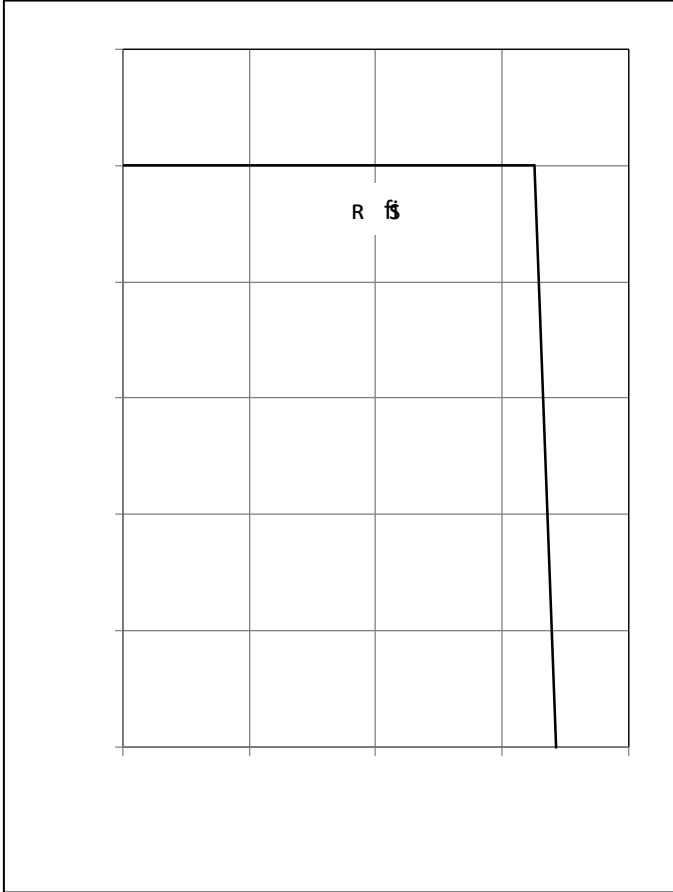
## ● Module Characteristics

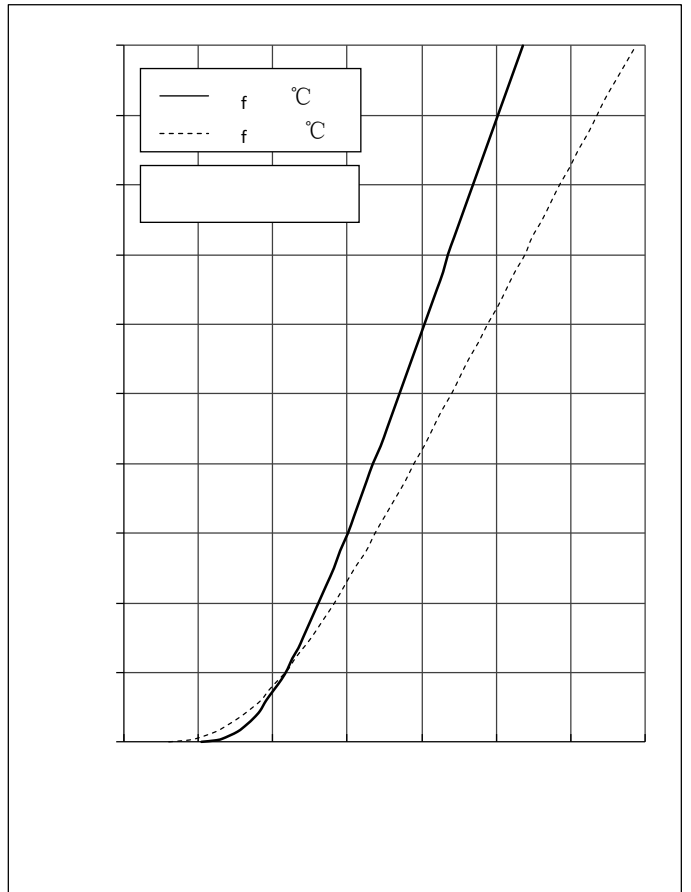
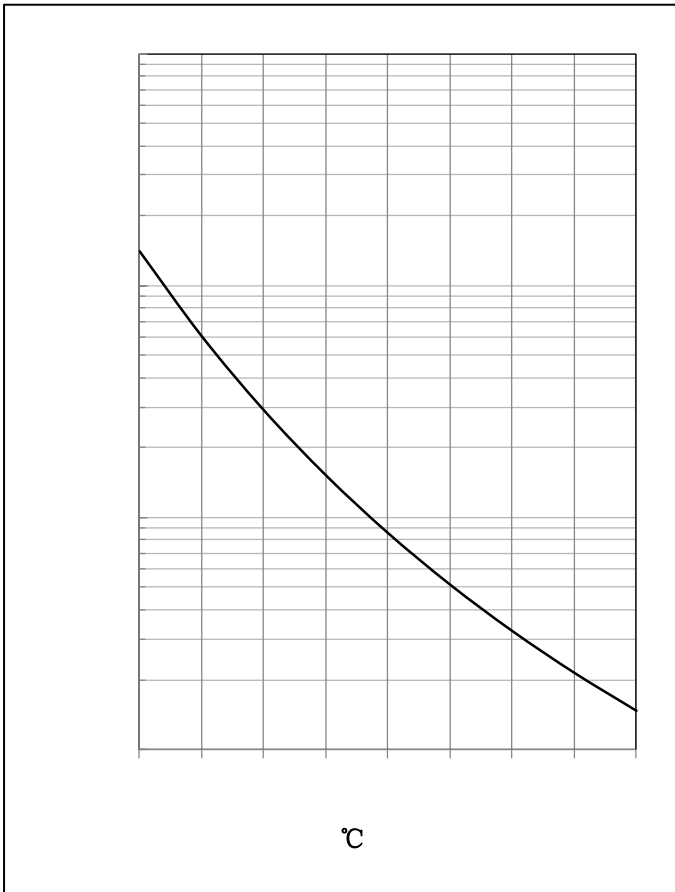
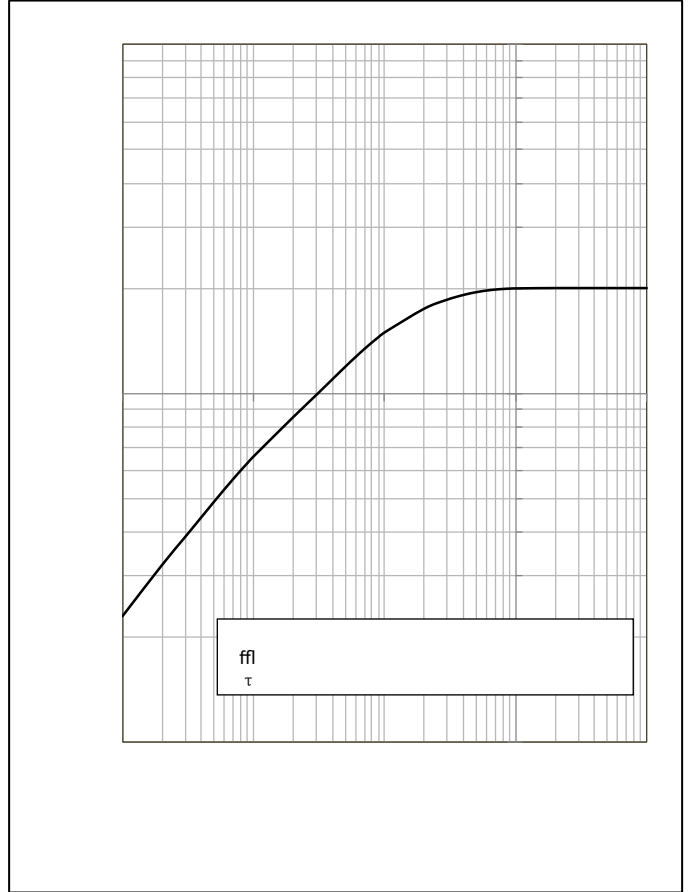
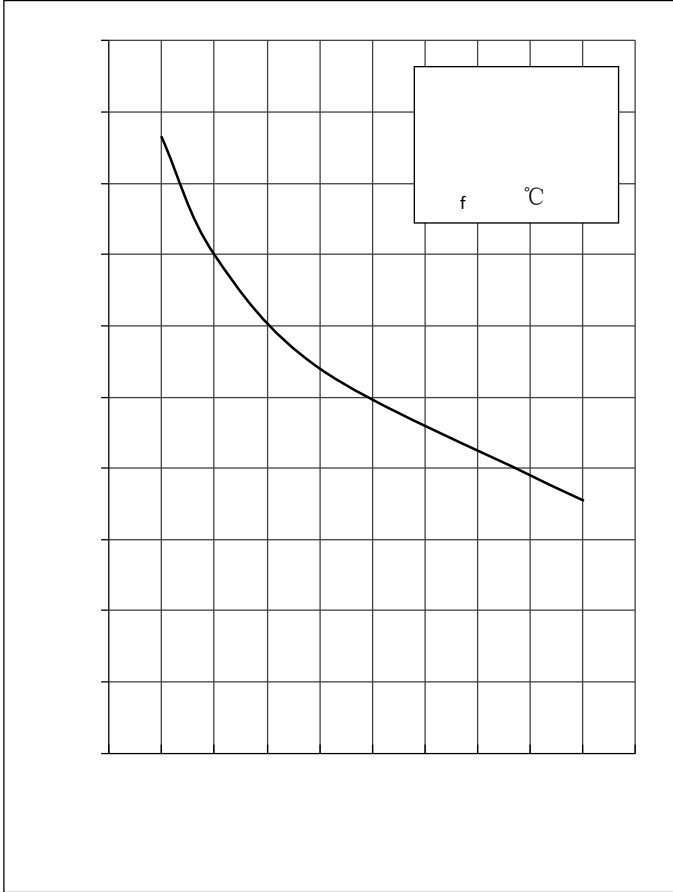
T<sub>c</sub>=25°C unless otherwise specified

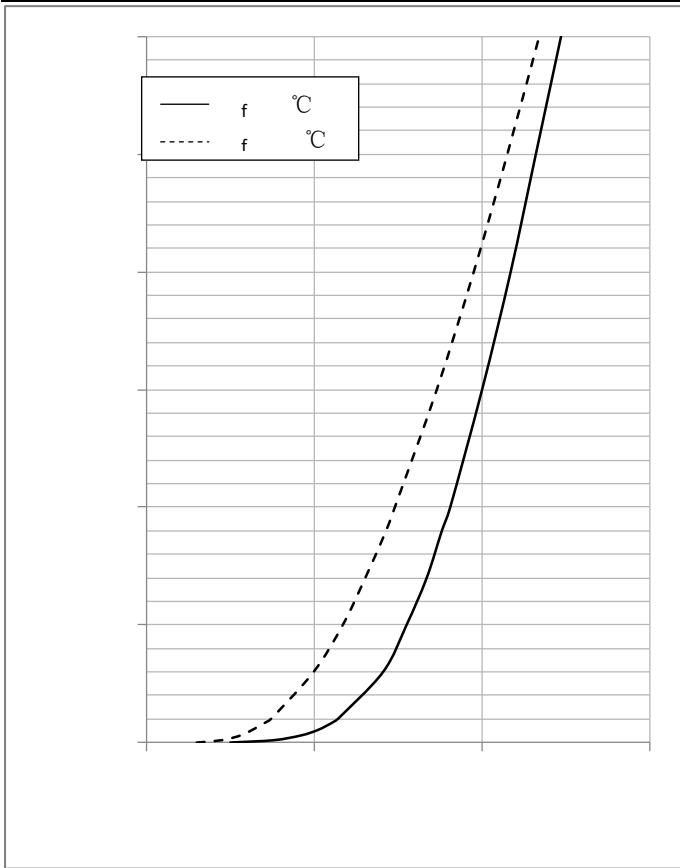
Parameter	Symbol	Conditions	Value			Unit
			Min.	Typ.	Max.	
N GDI 1 GB	1 DG	O HDA U				1
( SBPH PI DI / H MPM	/HS					°C
MDB PI DI / H MPM	/E					°C
.OMB / H MPM	/NB					°C
.MTD P OI H PG						nH
( PGG MNDI ONHD G OD	-	/ °C MRDC				m
	-					
/C M G NDI PI DI O N	-	M / DQ DM				&2
		M D DQ DM				
		M / =MF C M				
		M D C M				
		M D M DM				
/C M G NDI N O . DF	-	M / DQ DM				&2
		M D DQ DM				
		M / =MF C M				
		M D C M				
		M D M DM				
		M( PG				
( PI DB M + M GH						)
2 BCO A( PG						B





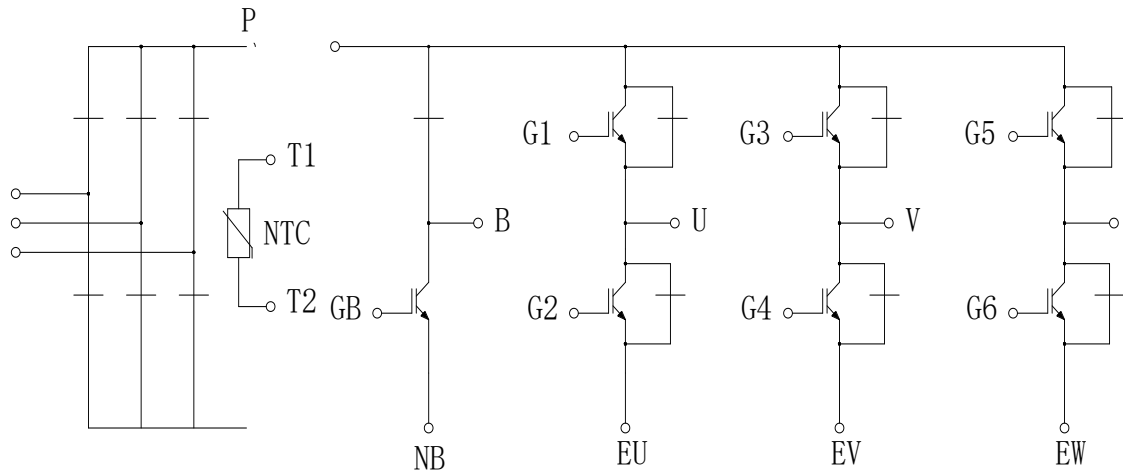




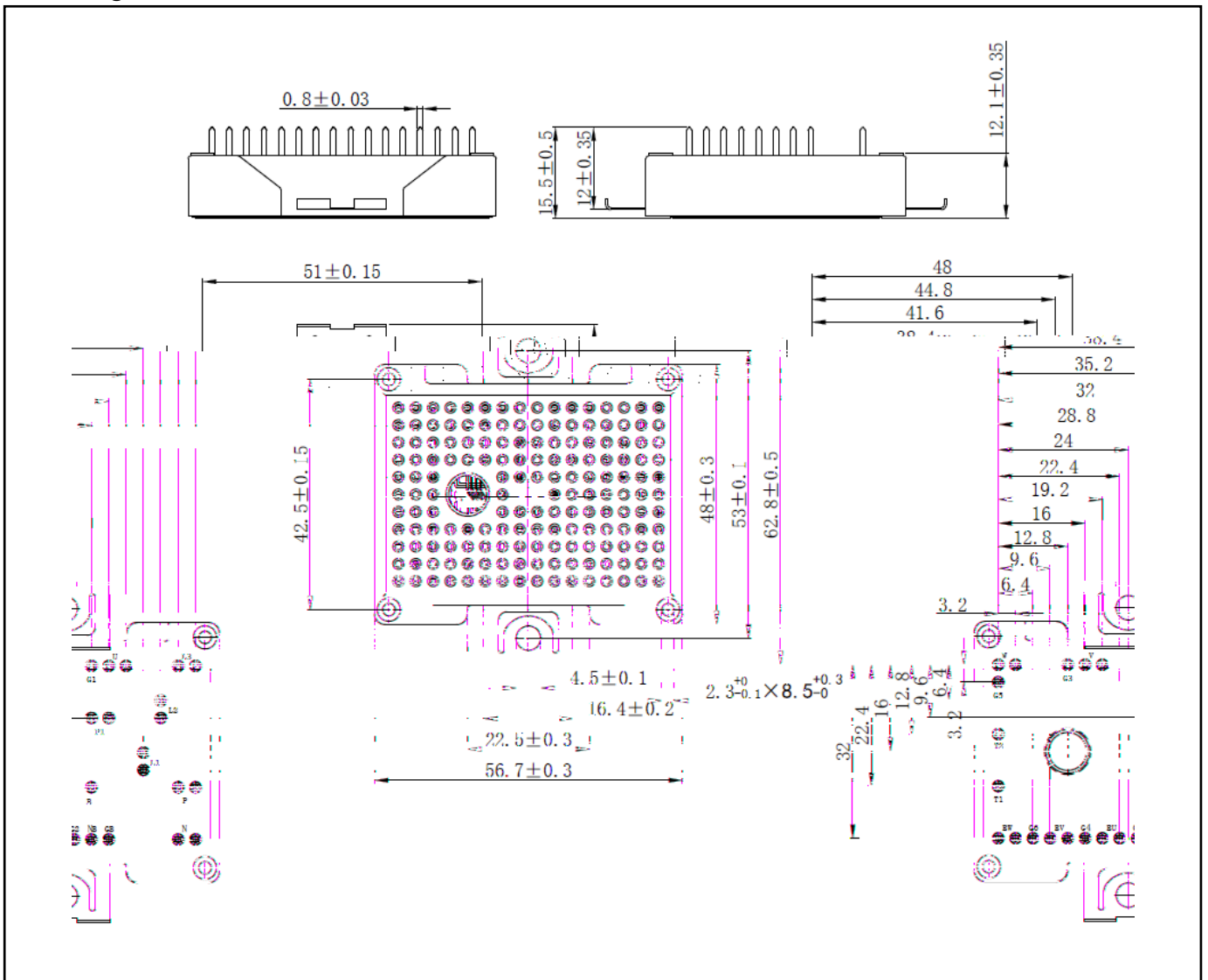




## Circuit Diagram



## Package Dimensions





## Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.